

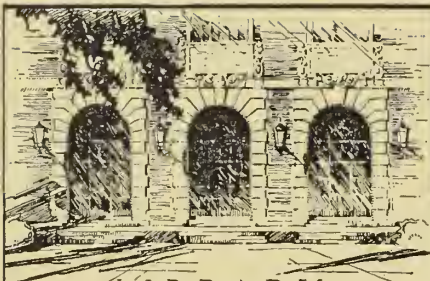
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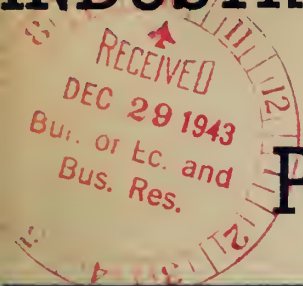


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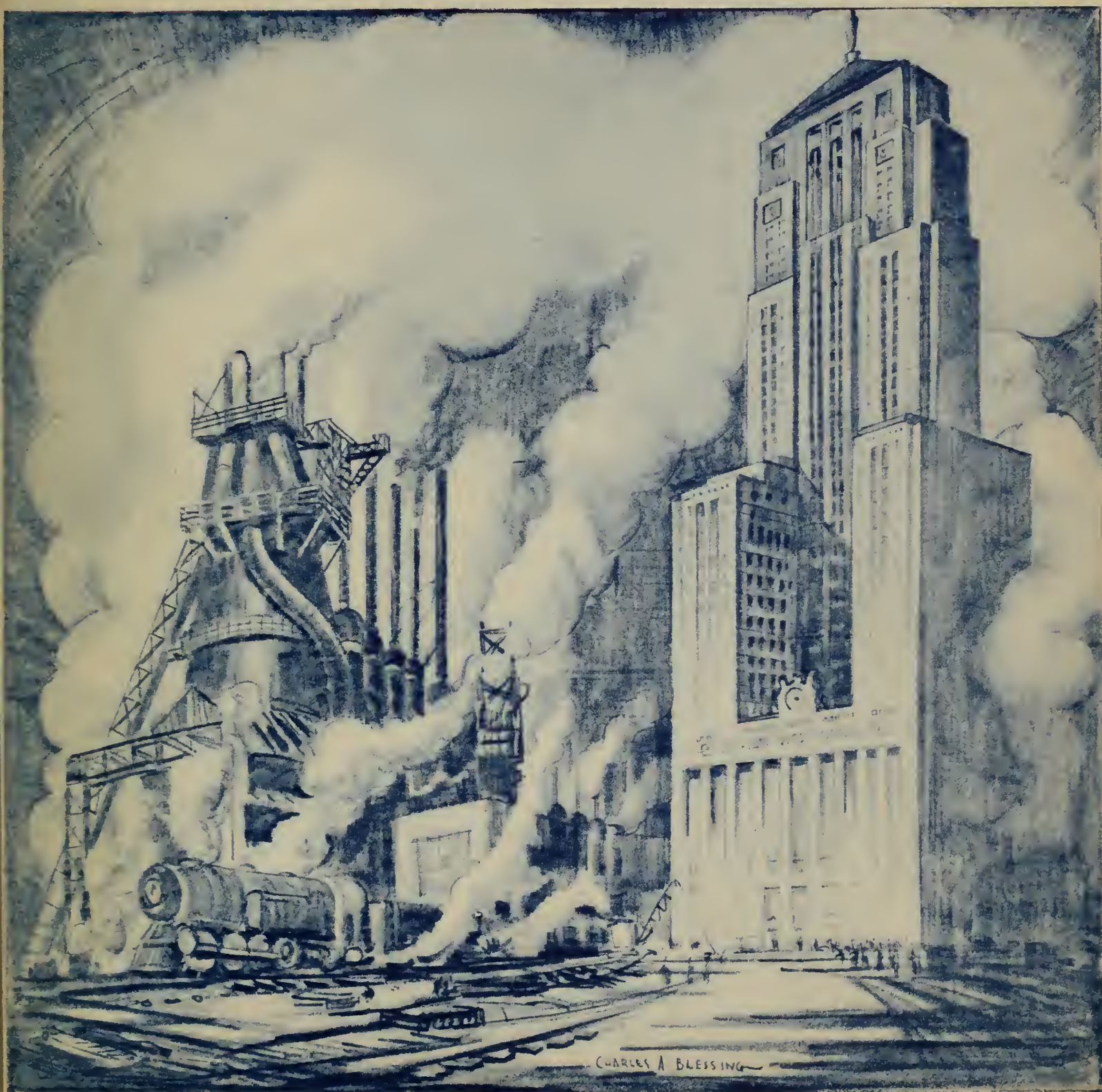
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SURVEY

INDUSTRIAL and COMMERCIAL BACKGROUND
FOR
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INDUSTRIAL and COMMERCIAL BACKGROUND

for

PLANNING CHICAGO



THE CHICAGO PLAN COMMISSION

20 North Wacker Drive

Chicago, Illinois

September, 1942

PREFACE

Why does a city exist? Why is it where it is? What made it grow? Do the reasons that led to its founding and caused its past growth still hold promise of stimulating future growth? These are very fundamental questions. For some cities they are hard to answer, and searchingly honest answers would raise serious doubts as to future prospects. In the case of Chicago, fortunately, there are very definite reasons for the location of the city, for its phenomenal growth, and for its continuing importance.

If the economic needs of the future are to be foreseen and planned for with some degree of accuracy, it becomes essential first to understand the developments of the past and the complicated forces operating in the present.

Before drawing plans for residential areas, new parks, schools, express highways and transit systems, we need first to consider the strength of the basic economic background of industry and trade. The whole city of Chicago exists principally because it is a concentrated assembly point for fabricating and for distributing goods to its encircling food-producing, tributary area. Its whole costly frame-work of streets, schools, parks and public utilities would not be needed if its industry and trade did not furnish jobs to a primary group of workers, whose incomes in turn support those engaged in retail trades, in professions, and in public services. The economic base of Chicago is supported by such a myriad of forces—eight thousand industrial establishments, thousands of wholesale trading and financial institutions—that it could not suddenly collapse like a single industry town or a mining town. The economic foundation of this city, however, would be progressively weakened or strengthened by the exodus of old established plants or the influx of new industries, or by the decline or growth of the contributory population and purchasing power in its trade areas.

This booklet was prepared by the Research Division of the Commission's staff. It is divided into three parts. The first of these, dealing with the historical development of Chicago's industries was written by Robert L. Nicholson, Research Assistant. The second part, of which Albert E. Dickens, Research Planner and Economist, is the author, treats the economic and statistical trends of manufacturing in Chicago and its region. Part III, prepared by Helen C. Monchow, Research Planner, depicts and analyzes the Chicago wholesale and retail trade area. In the second and third parts, emphasis is placed on analysis of those forces that are anticipated to operate in the foreseeable future. The entire study has been coordinated by Homer Hoyt, Director of Research, and other members of the staff have assisted in the organization of the material, and its graphic presentation.

The Plan Commission's work is necessarily carried forward simultaneously on many fronts. The emerging plan will be a composite of the thinking of authorities in all the varied fields of activity that go to make up a great city. Studies of industry, trade, population, highway layout, parks, schools, transit, utilities are carried forward progressively and at the same time. Each is re-

lated to the others, for all are parts of the whole conception of the future city.

Perhaps the most significant development of the war months is the establishment of a chain of very large new manufacturing plants along the western edge of Chicago. Some are just inside the city limits; others just beyond its borders. They may be expected to continue in use after the war, because their modern permanent construction makes them suitable for conversion even if they are not needed for their original purposes. They will thus help to assure the long term industrial supremacy of Chicago. At the same time, they intensify an already established trend toward peripheral industrial areas, as contrasted with the inlying and sector-like manufacturing concentrations of Chicago's earlier history. This new pattern may in time set the pace for a more ordered and more rational utilization of land throughout the city. Thus, with heavy manufacturing plants dispersed to the outskirts where sites measured in hundreds of acres are at hand, the near-in industrial districts can gradually be rebuilt in part with modern loft buildings suitable for light manufacturing, and in part devoted to residential use. Many workers are already making their homes near the outlying plants. Others will prefer to continue living in their accustomed neighborhoods, from which they will travel *outwards* to their work, against the heavy inbound stream of office and other downtown employees. The city would in this way achieve an efficient two-way rush hour loading of its mass transportation facilities.

The phases of this study pertaining to employment trends were strengthened by information obtained from large plants, through the joint auspices of the Plan Commission and the Association of Commerce. Messrs. Aubrey Mellinger and Leverett Lyon very kindly collaborated with the Commission in sending out letters requesting employment figures over a long period of years. In order to preserve the confidential character of this material, data for individual plants have not been published, but the general overall trends are reflected in the findings of this report. The material was particularly valuable in analyzing specific industry groups which have sustained employment losses due to technological changes.

Other direct acknowledgments will be found in the text, but this opportunity is taken to express particular appreciation to Messrs. George R. Mitten and J. E. Freeman of the Public Service Company of Northern Illinois, and to Mr. Felix Boldenweck of the Commonwealth Edison Company. Valuable data were also furnished by such organizations as: Illinois Bell Telephone Company; Peoples Gas Light and Coke Company; Illinois Department of Labor; Association of American Railroads; Radio Station WBBM and the Columbia Broadcasting System, Inc.; and Standard Oil Company of Indiana.

August, 1942.

T. T. McCrosky,
Executive Director.

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SUMMARY

PART I

HISTORICAL REVIEW OF CHICAGO'S INDUSTRIAL DEVELOPMENT

The general features operating to develop Chicago's industries in the 1833-1940 period were twofold—geographic and man-made.

Of the geographic features, Lake Michigan was the most important. It focussed communications between East and West at Chicago and acted as a highway for the transportation of the iron ore of the Mesabi district to the Lake Calumet region. Utilizing this ore and the coal from the nearby Illinois coal fields, this region became a leading steel center (p. 11). The favorable climate of the Chicago region, the rich soil of the surrounding area, the flat surface of Chicago's hinterland, the boundless supply of pure water, excellent health conditions, and facilities for cheap living for operatives afforded by the city's proximity to the herds and granaries of the West—all these aided in attracting industrial enterprises and the man power necessary for their operation (p. 11).

The development of the Erie and Illinois-Michigan canals, together with lake commerce and railroad construction, made possible the easy importation of workmen and raw materials and the export of finished products. Lastly, no one of the 38 railroads entering the city passed through it. Since these railroads represent nearly one-half of the total railway mileage of the United States, no other city in the world was in as close and daily contact with as large an area as was Chicago (p. 11).

The earliest of Chicago's industrial developments, those which emerged in the period from 1833 to 1848, reflected the agricultural setting of the young city (p. 11). Thus, the milling, brewing, distilling, slaughtering, and packing industries were the first to appear (p. 11). Other industries arose in response to the needs of Chicago's growing population for building materials, quarry products, wagons, furniture, and ship supplies. Although not comparable in value with the city's trade, the several industries helped to solve the problem of paying for eastern imports, and simultaneously provided commodities for exchange with the farmers and lumbermen of the Northwest (p. 13).

During the first 12 years of its second period of industrial development (1848-1877), Chicago was still essentially a commercial city, whose manufactures had developed almost entirely to supply local needs. Investments in real estate and ventures such as the produce trade were much larger than those in manufactures, undoubtedly because of the greater immediate returns and the still slight development of industry in the nation as a whole. After 1860, however, Chicago's industries changed their role and assumed a national importance, brought about by the greatly expanded agricultural trade resulting from the Civil War, the technological changes in many industries, and the industrial demands of the war itself. In this period meat packing, men's clothing, and agricultural machinery attained a primacy or laid the foundations for a primacy which was not to be challenged until very recent years (pp. 13-17).

An age of growing economic maturity characterized by the beginnings of industrial consolidation and the development of trusts and combines, especially in the iron and steel industry, and by a widespread adoption and use of older manufacturing processes and the invention of new ones featured Chicago's third period of industrial development from 1877 to 1897 (p. 17). The industrial giants of the preceding age maintained their former importance. The factors which had made meat packing a major Chicago industry during the 1848-1877 period—superior railway connections, continued leadership of a very high order on the part of the captains of the industry, unequalled facilities for the care as well as the slaughtering of animals, and monopoly of the by-products industry—were developed even more in this third period (p. 18). Increasing immigration and the founding of thousands of new towns in the trans-Missouri West and Southwest boomed men's clothing manufacture (p. 18). Growing mechanization helped the development of furniture manufacture (p. 18). Certainly the most phenomenal development was achieved in iron and steel manufacture.

The pre-war and war period of 1897 to 1918 was a golden age for Chicago. The principal industries of men's clothing, meat packing, and furniture—the so-called "Big Three"—held leading positions down until 1914. Then printing and publishing displaced furniture manufacture as the city's third ranking industry, while the iron and steel industry took first place. The last years before World War I were characterized, at least in part, by the development of parallel industries in other cities which gradually competed with and later exceeded the one-time national predominance held by the "Big Three" (p. 19). Yet, the rise of new and the great expansion of older industries such as carbide, women's clothing, and chemical products, offset partially the gradual decline of older industries (pp. 21-22). The whole period is marked also by an increasing trend toward consolidation of competing units in the several industries into trusts and combinations (p. 22).

Unquestionably the chief problems of Chicago's industrial life in the period from 1919 to 1940 have been decentralization and the increasing unbalance between the consumers' and producers' goods industries. This period saw the continued dominance of iron and steel, a spectacular development of printing and publishing, and a decline, both in respect to national and local importance, of meat packing, men's clothing, and furniture, and a great advance in industries producing electrical equipment, chemicals, and allied products. But consumers' goods production lagged and a serious lack of balance has thus developed (p. 23).

Equally significant, if not more so, has been the trend toward decentralization of Chicago's industries to adjacent and nearby suburbs, especially Clearing (pp. 23-28).

PART II

INDUSTRIAL TRENDS IN CHICAGO AND ITS REGION

The importance of manufacturing, as a basic source of employment, varies widely among cities. Some urban places are essentially industrial while others are primarily commercial; yet most cities are supported by varying combinations of industry, trade, and commerce. Chicago, however, differs from most cities in respect to the high degree of balance which obtains between industry and trade in its economic structure, each factor contributing approximately 50 per cent toward the city's economic support (p. 33).

The Chicago industrial area is second in importance only to the New York region and greatly overshadows the remaining 31 such areas in the United States. Although Chicago is the dominating constituent of the industrial area, it is functionally and economically inseparable from its satellite parts. Statistics indicate that the area, as an entirety, has not materially improved its relative position in the national industrial economy during recent years. However, this is of no particular local significance since most of the country's industrial areas have had similar experiences. In point of fact, the fairly stable relative position of the area during the past 20 years is a good indication of a healthy economic structure (p. 37).

The impact of the war effort will undoubtedly affect permanently many phases of the area's industrial economy. Many of the newly established war plants are expected to continue at a high level of operations after the war and it seems probable that the post-war relative industrial position of the Chicago industrial area will be even more favorable than at present, in the total national industrial economy of employment and output (p. 37).

At the present time Chicago appears to be well entrenched with respect to its relative industrial prominence among the country's leading cities (p. 37). However, Chicago's relative standing in the entire national industrial economy has declined since 1919, when employment in its manufacturing enterprises represented 4.8 per cent of the national total compared with 4.4 per cent in 1939 (p. 40). Furthermore, factory employment in Chicago proper has, in the past, tended to register an increasingly slower rate of recovery in relation to the national movement, following each successive downswing of the cycle (p. 40). The persistence of such a divergency may carry significant implications for future industrial employment in the city, although it is entirely possible that Chicago's factory employment, along with that of the larger area, will be permanently revitalized as a result of the national war program. However, the City of Chicago's receding statistical position does not indicate a net economic loss, since the decreases have been offset by gains in the contiguous area that is fundamentally a part of Chicago's total economy.

The relocation of Chicago manufacturing establishments from within the city proper to points outside the city's boundaries is not a particularly recent feature of the city's industrial economy. But unless its implications are recognized and dealt with appropriately, pro-

found alterations may result in the economic background of Chicago.

From 1935 through 1940 approximately 4,000 employment opportunities were transferred from the city proper to its suburban territory as a result of the outward flow of Chicago industries (p. 47). While this industrial outflow is tending to unbalance both the industrial economy of Chicago proper and that of the larger area, the fact that most of the decentralized and relocated plants are clustering on the city's rim and in nearby suburban towns tends, in some degree at least, to lessen the seriousness of the situation (p. 49).

Four principal reasons for the decentralization of Chicago industries may be cited (p. 51).

1. Real and personal property taxes are essentially lower in the territory surrounding the city. Since local taxes usually constitute a large item in operating costs, this differential is a very real factor in determining plant locations.

2. Substantial savings in plant construction costs are effected in the outside area, because the Chicago building code and various industrial regulations do not govern.

3. Land costs are definitely cheaper outside the city, even after allowing for the cost of improving and developing raw sites.

4. The organized industrial district of Clearing offers, in addition to initial economies, many desirable features and inducements for the location of plants within its boundaries.

In order to improve, both qualitatively and quantitatively, the position and balance of the City of Chicago's manufacturing economy in relation to the Chicago industrial area and to the country generally, the following suggestions are offered (p. 52):

1. Stop industrial decentralization by: (a) re-examination of the city's tax structure with particular reference to the tax burdens on industrial property; (b) study and equalization of building code requirements in the city and adjacent areas, and examination of possible steps to expedite administrative procedures; (c) re-examination of factory inspection services and regulations, with a view to simplification and time saving methods.

2. Effect qualitative and quantitative improvements in the city's industrial economy by (p. 52): (a) encouraging the location in Chicago proper of a substantial number of new industries, financially strong, each employing, when completely developed, upwards of 2,500 workers; (b) particularly encouraging a greater degree of industrial diversification—with emphasis on consumer goods—in order to promote employment stability and to utilize more fully the labor force of the city; and (c) appraising critically Chicago's industrial role in the present war economy with a view toward its post-war reorientation to the city's advantage.

PART III

COMMERCIAL TRENDS IN CHICAGO AND ITS REGION

The trade-area of a city does not lend itself to very precise definition because of the many ramifications of the trading process, some of which have wide and some narrow scope (p. 55). To avoid the dangers of too great precision about a concept which is not too precise in itself, two trade areas were delimited for Chicago—one representing Chicago's sphere of influence with respect to wholesale trade, and the other the area which is served by and which in turn supports retail establishments in the vicinity of Chicago (p. 55).

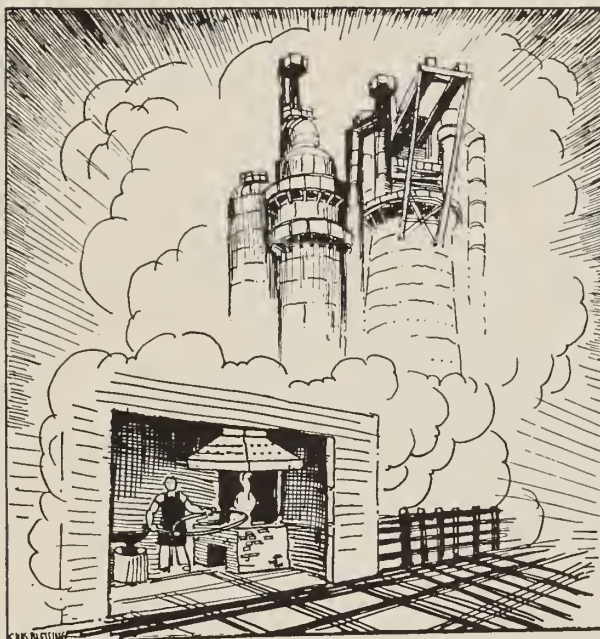
The wholesale area, as finally outlined, may be described roughly as the territory included within a 200-250 mile radius of Chicago (p. 57). The retail trade area is synonymous with the six-county (Cook, DuPage, Kane, Lake and Will in Illinois and Lake in Indiana) industrial area used in Part II for analysis of the industrial economy (p. 59).

Trade activity is measured in terms of people and their purchasing power. With respect to the population factor two questions are pertinent: are people coming into or departing from a given trade area? (p. 60); and is that area holding its own populationwise relative to adjacent or competing areas? The answer to the first question is that people are still coming into both the wholesale and retail areas of Chicago, but they are moving in at a considerably decreased rate and this diminution in the rate of population increase is greater for the retail than for the wholesale area (p. 60). The answer to the second question is that the Chicago trade areas are increasing in population less rapidly than the seven-state area of which they are the hub (p. 60). Likewise the rates of growth for the two Chicago areas were somewhat smaller during the last census period than those of other cities whose trading areas are adjacent to Chicago's wholesale territory (p. 61). These are the trends up to 1940. Since that time, certain more substantial gains are in evidence and it is hoped that they may be maintained for the benefit of Chicago's trade and commerce in the future (p. 61).

Trends in purchasing power have been measured in terms of five series for both wholesale and retail trade areas. These series are: (1) annual volume of retail sales; (2) spendable income per year; (3) number of new passenger automobiles purchased annually; (4) number of persons employed in manufacturing enterprises; and (5) average total annual earnings (pp. 64-65). Each of the first three of these measures shows an over-all improvement in recent years for both the wholesale and retail areas relative to the seven-state region and to the United States. These gains are not large as yet, but increased war-production activity gives basis for the expectation that this upward trend of trade and commercial potentiality centering in Chicago will continue to increase in the immediate future at least (p. 64). The manufacturing indexes show that the Chicago areas have been holding their own, but here again war activity promises upward trends of manufacturing employment and payrolls which should bring substantial gains in the purchasing power of the Chicago areas (pp. 64-65).

In general, the future of Chicago's trade and commerce looks promising—especially in the war period and during the anticipated buying spurt which so often follows periods of war-curtailed purchasing (p. 65). But if Chicago is to retain these gains permanently, it will be necessary to keep constant watch to protect her currently strong trade position. A particularly crucial factor to guard is her transportation supremacy, for transportation is the most vital medium for trade and commercial success (p. 66). Other factors to be watched—but less readily measurable—are trends in trade practices which may have long-run effects upon Chicago's commerce (p. 66). Planning for future trade development includes analysis of all economic background factors as well as physical plans for both the larger and the smaller trading areas (p. 66).

PART I
HISTORICAL REVIEW OF
CHICAGO AND ITS GROWTH



Chapter I

BASIC FACTORS IN CHICAGO'S MANUFACTURING DEVELOPMENT

The geographical features of the Chicago area were and are of prime importance in the development of its manufactures. Lake Michigan, in its role of a 307-mile barrier of deep water, made it necessary for all land travel between East and West to pass around its southern end. As the meeting place of lake, river, canal and wagon transportation, and rail carriers in turn, the railroad lines between the Northwest and the East were focused to a point centering on Chicago. Chicago became the natural and principal distributing and manufacturing point for the great Mississippi Valley.¹

But Lake Michigan, although a barrier, was also an aid to transportation, for, after the discovery of the great iron mines in the Mesabi district of Lake Superior, it afforded an all-water, inexpensive means of transporting the ore of the district to the Chicago area and more particularly to the Lake Calumet region with its excellent harbor facilities. This became a great iron and steel manufacturing area by reason of its propinquity to Lake Michigan and the great supplies of coal mined in the Illinois coal field lying only 60 miles south of the city. The great coal resources of Illinois and Indiana were potent factors in the development of manufacturing of all types.²

Again, the favorable climate, the rich soil of the surrounding region, the flat surface of Chicago's hinterland, boundless supply of pure water, excellent health conditions, and facilities for cheap living for operatives afforded by Chicago's proximity to the herds and granaries of the West all aided in attracting industrial enterprises and the man power necessary for their operation.³

¹Jules Karlin, *Chicago Background of Education* (Chicago: Werkman's Book House, 1940), p. 65; *Industrial Chicago, The Manufacturing Interests* (Chicago: The Goodspeed Publishing Company, 1894), III, 15.

²Everett Chamberlin, *Chicago and Its Suburbs* (Chicago: T. A. Hungerford and Company, 1874), p. 128; *Annual Review of the Commerce, Manufactures and the Public and Private Improvements of Chicago, 1854* (Chicago: Democratic Press Job and Book Steam Printing Office, 1854), p. 69. (Henceforward the several editions of this publication will be referred to as *Annual Review* together with the appropriate date.)

Man-made factors complemented geographical ones in the early 1850's to assist in the building up of Chicago's manufactures. Lake commerce, proceeding through the newly constructed Erie Canal in New York State and Lakes Erie, Huron and Michigan to its natural terminus in the Chicago region,⁴ cooperated with the newly constructed Illinois-Michigan Canal to develop a large wholesale trade in groceries, shoes, clothing, and hardware, and with the railroads to create a new manufacturing industry. The eastern railroads brought in a large supply of skilled and unskilled laborers who assisted in the creation and operation of industries; furthermore, their demands for consumers' goods contributed to the growth of manufacturing. Meanwhile the western railroads not only expanded the market for heavy industry—the wagons and agricultural implements already being produced in Chicago for the machine-minded pioneers—but also helped to create industries ancillary to the operation of the railroads—car-repair and car-building shops, boiler works, iron rail mills, and bridge building plants.

Lake commerce assisted in the development of heavy industry by importations of iron (from as far as Scotland) and lumber for wagons, agricultural implements, and railroad cars. Lastly, coal shipped in from the newly developed Illinois coal field by way of the Illinois-Michigan Canal assisted the budding iron industry.⁵

Finally, no one of the 38 railroads entering the city passed through it. Since these railroads represent nearly one-half the total railway mileage of the United States, no other city in the world was in as close and daily contact with as large an area as was Chicago.

³Karlin, *op. cit.*, p. 66; *Annual Review, 1854*, pp. 19-20 and 40-41; Chamberlin, *op. cit.*, p. 128; J. Seymour Currey, *Chicago: Its History and Its Builders* (Chicago: S. J. Clarke Publishing Company, 1912), III, 342; Chicago Association of Commerce, *Chicago—The Great Central Market* (Chicago: R. L. Polk & Co., 1923), p. 43.

⁴*Industrial Chicago* III, 15; *Annual Review, 1854*, p. 19.
⁵Homer Hoyt, *One Hundred Years of Land Values in Chicago*, (Chicago: The University of Chicago Press, 1933), p. 59.

Chapter II

FROM STAGECOACH TO RAILROAD, 1833-1848

Manufacturing was relatively unimportant as compared with trade in early Chicago.¹ Among the embryonic industries in the city prior to 1835, meat packing and tanning ranked first. They found their origin in the military character of the early history of the town and the abundant wild game of the adjoining prairies. In response to the needs of Fort Dearborn's garrison, a meat packing house was located on the north branch of the Chicago River in 1831.² Enterprising settlers salted, packed, and shipped deer meat to New Orleans in dugout canoes.³ By 1834 the tanning industry was producing a considerable quantity of rough but usable leather for harnesses, saddles, and trunks.⁴

¹John Moses and Joseph Kirkland, *The History of Chicago* (Chicago and New York: Munsell and Co., 1895), I, 87.

²Howard Copeland Hill, "The Development of Chicago as a Center of the Meat Packing Industry," *Mississippi Valley Historical Review*, X, 256; James D. Cunningham, "Industrial Importance of the Dominant City of Midwest Area," *Chicago—The World's Youngest Great City* (Chicago: The American Publishers Corporation, 1929), p. 102.

³Cunningham, *op. cit.*, p. 99.

⁴Bessie Louise Pierce, *A History of Chicago 1673-1848* (New York: A. A. Knopf, 1937), I, 141; Louis A. Dumond, *Birth and History of Chicago Industry*. Appendix F in *An Analysis of the Chicago Industrial Area With Respect to National Defense Production and New Plant Establishment* (Chicago: Industrial Department, The Chicago Association of Commerce, August, 1940), p. 119.

During the first few years after Chicago's incorporation in 1834, manufacturers were closely connected with the agricultural life of the community. The regular influx of grain, cattle, hogs, and other products of the field and farm led to the creation of various branches of dependent manufacturing which may be designated as primitive manufactures⁵—milling, brewing, distilling, slaughtering, packing, and the industries dependent upon and allied to slaughtering and meat packing, soap and candle making, lard rendering, and glue manufacture.⁶ It may be remarked in passing that of these early industries only slaughtering, meat packing, and lard rendering still remain major industries in Chicago.

In the post-incorporation period additional factors explain the development of the meat packing industry. The high freight rates laid on frontier communities coupled with the long distances from urban areas kept Chicago from obtaining supplies easily and thereby led to a traffic in meat.⁷

⁵A. T. Andreas, *History of Chicago* (Chicago: A. T. Andreas, 1884), I, 560.

⁶Pierce, *op. cit.*; Dumond, *op. cit.*

⁷Pierce, *op. cit.*, I, 137.

But the industry, though increasingly important in the economic life of Chicago, did not assume large proportions prior to 1845 or 1850. The lack of railroads in the surrounding territory in the 1830's and early 1840's, the small number of steamers on the lakes, the still sparse settlement of the northern and western hinterland, and the inadequate transportation facilities connecting this region to Chicago all operated to check the growth of the meat-packing industry. By 1848, the close of the first chapter of Chicago's industrial history, most of the output of Chicago's six packing houses was still consumed by the local citizenry. Such towns as Peoria, Beardstown, Alton, and Quincy were superior competitors.⁸

Meat packing also stimulated greatly in the 40's the allied industries of soap, lighting supplies, and cooperage. Soap manufacturers utilized the tallow and fat by-products of the meat packers, as did the candle and lard-oil manufacturers, competitors in the lighting field. To meet the growing demand for containers on the part of the meat packing industry, the cooperage industry expanded considerably.⁹

Of the several major industries, milling was undoubtedly the most important during the 40's. However, despite the gradually increasing output of flour up to 1868, Chicago was outdistanced by St. Louis in the 1833-1848 period, perhaps because Chicagoans found it more profitable to market the unmilled grains on the eastern seaboard than to spend time and money on processing.¹⁰

In the group of the several lesser industries of this period—building materials, wagons and carriages, agricultural machinery, steam driven machinery, saw milling, furniture, ship building, iron and steel products, and newspapers—the first named was perhaps the most important. The several divisions of this enterprise—brick making, quarrying, and sash, door and blind manufacture—were favored by the abundance of raw materials in and near the city. Brick-making, an activity as old as the city itself, utilized the sub-soil of Chicago and vicinity, which consisted of a blue clay excellently suited to the purpose.¹¹ Manufacture of bricks began as early as 1833 when Tyler K. Blodgett established the first brick yard on the north branch of the river.¹² Other entrepreneurs followed suit and laid the groundwork for the large development of the industry in the middle 1850's.¹³

Quarrying operations assumed importance in the closing years of the period. The famous "Athens Quarries" situated near Lemont, Illinois, only about 18 miles southwest of Chicago, were opened in 1846. Producing a fine white magnesium limestone resembling marble, the quarries were rapidly expanded in the next few years and the stone, at first used only for foundations, soon came to be utilized for facing buildings. At length "Athens Marble" became Chicago's favorite building material and in the 1850's was exported to all the important cities in the Northwest. Indeed, it became a serious competitor of the stone produced by the celebrated Lockport quarries in New York.¹⁴

Other building material products manufactured from the timber supplies available in and around Chicago were sashes, doors, and blinds. Operations in this industry began in 1838.¹⁵

In the pre-railroad period of Chicago's history the manufacture of wagons played an increasingly important role. It is true that prior to 1839 much of the activity of the industry, which was inaugurated in 1834,¹⁶ was devoted to the repair of wagons which had been made elsewhere. Hence it is not strictly accurate to speak of a wagon industry. But after that date a full fledged enterprise gradually developed, being called into existence by the developing farms and towns of Chicago's hinterland. With the growth of wealth there came the concurrent desire of the beneficiaries thereof for something better than a lumber wagon for transportation, especially on Sundays, and a demand for carriages sprang up. Chicago capitalists, to meet the demands of business and pleasure, decided that the Garden City could and should drop its dependence on New York City and manufacture its own wagons and carriages,¹⁷ but the industry did not come into its own until the middle 1850's.¹⁸

The agricultural machinery industry dates from 1847 when Cyrus McCormick moved to Chicago from Cincinnati and began the manufacture of his celebrated reaper. Prior to McCormick's arrival only a few plows, the manufacture of which is traced back to 1834, had been produced. The McCormick reaper works, once established, produced reapers at an ever accelerated pace.¹⁹

Likewise the steam-driven machinery industry appeared near the close of the period, in 1842, and was of small importance. Hitherto, Chicago factories had been dependent on other cities for this kind of machinery.²⁰

Chicago's sawmilling industry was confined to local demands. The sawmills, the earliest of which was constructed in 1832 and employed only two men,²¹ utilized the trees grown in the immediate neighborhood—white ash, poplar, elm, oak, etc. The city's early homes and business houses were built of lumber made of unseasoned timber.²²

The present important furniture industry of Chicago traces its origin to the rapid increase of Chicago's population and that of the surrounding area in the later 1850's, which naturally suggested the expediency of erecting a furniture factory. The industry remained insignificant until the 1850's—the census of 1840 speaks of only four employees and \$2,500 capital invested in the activity—and produced a decidedly inferior grade of chairs, bedsteads, and bureaus, almost all of which were consumed by the local market.²³

Another minor enterprise in early Chicago, ship-building, commenced in 1835 in response to the need for freight and mail carriers to and from southwestern Michigan.²⁴ Chicago was not to become a great ship-building center until 1850.²⁵

Iron and steel manufactures in the 1833-1848 period were few and insignificant. We hear of blacksmiths in 1833,²⁶ a plow maker in 1834,²⁷ a foundry in 1835,²⁸ a machine shop in 1839,²⁹ and a stove factory in 1846.³⁰ Chicago's primacy as a steel center was to await a later day.

¹⁶*Ibid.*

¹⁷A. T. Andreas, *History of Chicago* (Chicago: A. T. Andreas, 1886), III, 742.

¹⁸*Ibid.*, pp. 742-743.

¹⁹Dumond, *op. cit.*, p. 122.

²⁰*Ibid.*

²¹*Industrial Chicago*, III, 38.

²²*Ibid.*, pp. 119 and 121.

²³Andreas, *op. cit.*, III, 733; Moses and Kirkland, *op. cit.*, II, 439 and 440; Dumond, *op. cit.*, p. 121.

²⁴Dumond, *op. cit.*, p. 120.

²⁵*Ibid.*

²⁶*Ibid.*

²⁷*Ibid.*

²⁸*Ibid.*

²⁹*Ibid.*

³⁰*Ibid.*, p. 122.

⁸Hill, *op. cit.*, pp. 257-258.

⁹Pierce, *op. cit.*, I, 141-142; Dumond, *op. cit.*, p. 120.

¹⁰Bessie Louise Pierce, *A History of Chicago 1848-1871* (New York: A. A. Knopf, 1940), II, 87-88.

¹¹Andreas, *op. cit.*, I, 570.

¹²*Ibid.*; Dumond, *op. cit.*, p. 121.

¹³Andreas, *op. cit.*, I, 570.

¹⁴Dumond, *op. cit.*, p. 122; Andreas, *op. cit.*, I, 570; *Reminiscences of Chicago During the Forties and Fifties* (Chicago: The Lakeside Press, 1913), pp. 10-11.

¹⁵Dumond, *op. cit.*, p. 121.

Lastly, the newspaper industry deserves consideration. Between 1833 and 1852, a few years after the close of the first period of Chicago's industrial development, a total of 56 papers was started. All but 16 were obliged to suspend publication before the end of 1852. The reasons for the May-fly characteristics of the industry may be ascribed to the feeble financial position of the great majority of them.³¹

The manufacture of fanning mills, grain cradles, burr mill-stones, blocks, pumps, matches, guns, locks, books, watches, sails, and such items of wearing apparel as boots and shoes, hats, caps and shoes, were minor manufactures in early Chicago (1839).³²

A survey of the progress and development of Chicago's industries from 1833 to 1848 reveals an evolution from the old handicraft shop methods to the larger and more intricate organization of the factory system during the years directly following 1842. The meat-packing industry developed from the slaughter house into a genuine factory organization with the use of steam driven machinery, the employment of larger numbers of workers under a single roof, and a division and distribution of labor. A similar evolution occurred in the agricultural implement, iron and steel, sash and door, and milling industries.³³ A second group of indus-

³¹Harrison Bernard Fagan, "Industrial Relations in the Chicago Newspaper Industry, 1930," Typewritten thesis (Ph.D.), University of Chicago, p. 27.

³²Dumond, *op. cit.*, p. 121; Pierce, *op. cit.*, I, 147-148.

³³Pierce, *op. cit.*, I, 146-147.

tries, which had not yet become identified with the factory system of economy but were now developing in that direction, were the wagon and carriage, brewery, furniture, and shipbuilding enterprises. However, many kinds of manufacturing were still in the handicraft stage. Such were the boot and shoe, tailoring, saddle and harness, cigar and tobacco, ink and starch, sailmaking, bookbinding, and watchmaking industries.³⁴

Despite the absence of statistics as to the volume and value of the manufactured products of Chicago before 1850, it is clear that Chicago's industries played an important role in the economy of the young city. In 1847 some 200 manufacturing concerns employed almost 1,400 persons—approximately one-tenth of the population—and supported about one-third of the inhabitants.³⁵ Furthermore, the manufactures produced a surplus which was marketed both in the East and in the dependent agricultural regions lying to the West. Thus industry helped solve the problem of paying for eastern imports and simultaneously provided commodities for exchange with the farmers and lumbermen of the Northwest. Chicago's industries, in fine, although not as yet comparable to the commercial activities of the city, ably assisted the work of Chicago's business men in attaching to the city an ever growing dependent area.³⁶

³⁴*Ibid.*, pp. 137-148.

³⁵Norris' *Chicago Directory for 1846 and 7* (Chicago: Greer and Wilson, 1846), p. 7.

³⁶Pierce, *op. cit.*, I, 148.

Chapter III

THE YOUTH OF CHICAGO'S INDUSTRIES, 1848-1877.

The second period of Chicago's industrial development, 1848-1877, is a period of adolescence, especially in the years prior to 1861. Old and new industries alike were greatly accelerated during and by the Civil War and several of them, e.g., meat packing, men's clothing and agricultural machinery, attained a primacy or laid the foundations for a primacy not to be challenged until very recent years. The post-civil war period, 1865-1877, marked a continuation of the development of Civil War days, checked briefly by the Chicago fire of 1871, and more definitely by the panic of 1873 and the succeeding years of depression.

The leading industries in the 1833-1848 period—milling, packing, and leather manufacturing—held their positions of leadership down to 1861, challenged, however, by two new and related enterprises, brewing and distilling.¹ In the Civil War and reconstruction periods packing and tanning forged far ahead of their rivals in other American cities and had as competitors other new manufactures born in the Civil War period—men's clothing, boots and shoes, furniture, and machinery—especially agricultural machinery.

Milling. The milling industry, second in importance when measured by value of products, in spite of its position of relative inferiority vis-a-vis that of St. Louis,² continued to develop down to 1868. Notwithstanding the foundation of the Miller's Association of Chicago in 1867, an organization which established grades of flour and agitated against the exactions of the warehouse interests, the industry underwent a decline after 1868, the number of mills decreasing from 15 in 1869 to 11 in 1870.³ Milwaukee wrested from Chicago her second-

place position and by 1870 had joined St. Louis as a leading flour-milling city.⁴ This evolution resulted in part, at least, from the moving westward of the center of the wheat-producing area.⁵ Greater attention to and larger investments in the meat packing and iron and steel industries on the part of capitalists also helped to bring about the decline. The output in 1870 was valued in excess of \$2,000,000.⁶

Far different was the case of the meat packing industry, which ranked first, according to the census of 1870, with an output of \$19,000,000.⁷ Beginning with the late 40's the industry developed rapidly. Chicago was already a prominent packing center by 1850⁸ and a decade later was the greatest general meat center of the West,⁹ primarily because her hinterland, which was settled in the mid-nineteenth century by an intelligent, energetic, and progressive people ready and able to develop its natural resources, was unequaled for the raising of livestock.¹⁰ Secondly, with the completion of the Illinois-Michigan Canal and the Galena and Chicago Railway in 1848, many of the products, especially cattle, of northern Illinois and southern Wisconsin which heretofore had found an outlet at St. Louis and New Orleans now flowed to Chicago.¹¹ A few years later the Atlantic coast was connected by new railways with Chicago, which

¹Pierce, *op. cit.*, II, 88.

²*Ibid.*, pp. 116-117; Bogart and Thompson, *op. cit.*, pp. 396-397.

³*Ninth Census of the United States: 1870. Industry and Wealth*, Vol. III (Washington: Government Printing Office, 1872), p. 649. (Hereafter references to this work will be cited as *Ninth Census*.)

⁴*Ibid.*

⁵Victor S. Clark, *History of Manufacturers in the United States 1607-1860* (New York: McGraw-Hill Book Co., 1929), p. 484.

⁶Arthur Charles Cole, *The Era of the Civil War, 1848-1870*, Vol. III of the *Centennial History of Illinois* (Springfield: Illinois Centennial Commission, 1910), p. 85.

⁷Hill, *op. cit.*, p. 273; Fagan, *op. cit.*, p. 4; Lester Armour, "The Meat Packing Industry in Chicago," *Chicago—The World's Youngest Great City* (Chicago: American Publishers Corporation, 1929), p. 107.

⁸Hill, *op. cit.*, p. 258; *Annual Review*, 1864, pp. 11-12.

¹Andreas, *op. cit.*, I, 560.

²See p. 5, Chap. II.

³Ernest Ludlow Bogart and Charles Manfred Thompson, *The Industrial State, 1870-1893*, Vol. IV of the *Centennial History of Illinois* (Springfield: Illinois Centennial Commission, 1920), p. 397.

was now able to send goods much more rapidly than by the river route. The importance of the development of railways in Chicago's growth as a meat packing center lies in the fact that they eliminated the necessity for many small and local meat packing centers and thereby gave Chicago an opportunity to assume a position of dominance. Prior to the building of the railways, cattle and hogs had been driven into local centers from the immediately surrounding regions because of the inability of cattle, especially hogs, to stand the rigors of long overland trips. Consequently, packing centers tended to be small and scattered. Additional reasons for the dispersion of meat packing were the increasing difficulty, because of the development of towns, of pasturing along the roads the animals driven in on foot to the packing centers and the impossibility of obtaining fresh meat except through the slaughter of animals in the locality where they were consumed.¹² The railroads, by reason of their ever increasing annihilation of time and distance, eliminated the difficulties of feeding and transporting cattle. With the invention of the refrigerator car in 1874, fresh meat could be transported indefinite distances. Chicago, as the natural railway center of the Middle West, therefore came to be the leading meat packing city of the United States.¹³

Supplementing and complementing the influence of the iron horse in the development of the meat packing industry were the ingenuity, organizing skill, and business acumen of Chicago's early meat packers such as Morris, Armour, Swift, Hammond and Libby.¹⁴ Perhaps in no other branch of the industry were these qualities better illustrated than in the by-products branch. Utilizing the by-products of the industry, they succeeded in marketing their meats at lower prices than local butchers in the East could offer. By the close of the 50's the lard and tallow produced by the Chicago slaughtering operations for soap, cooking, and illuminating uses came to dominate this part of the by-products industry in the United States. During the 1848-1877 period the packers manufactured brushes, Prussian blue, bone black, beef gall, beef extract, glycerine, gelatine, fertilizer, and glue.¹⁵ It was not until after 1871, however, that they came to control the whole by-products industry.

Again, the packers strengthened the meat packing industry and widened its market by adopting new methods. They used English practices of pork curing after 1862 in order to meet the demands of the English market. Using curing rooms cooled by ice stored during the winter, the packers were able in 1858 to carry on summer pork packing operations, thereby gaining new conquests in the important New York market.¹⁶

The effect of the Civil War was noteworthy. The closing of the southern markets resulted in a great increase in the shipment of farm animals to the Chicago yards.¹⁷ Between 1862 and 1865 beef and pork packing at Chicago increased about 300 per cent.¹⁸ Located at a sufficient distance from the scene of hostilities—a situation not as certain in the case of St. Louis and Cincinnati—Chicago's meat packing industry drew to itself the lion's share of the available capital

and enterprise.¹⁹ Again, the steady influx of government contracts, although carrying no great profit, at least helped the packers to establish themselves, for they knew exactly the amount they could sell and the price that they would receive for it.²⁰

A minor factor was the centralization of the facilities for handling livestock in 1865. In the ante-bellum period much waste of time and effort resulted from the scattered character of the facilities, cattle being kept on the outlying prairies and hogs being confined to small pens until time for slaughtering. Later stockyards were established in various sections of Chicago, each being served by its own railroad. Yet confusion still prevailed, for the packer was obliged to transfer his stock from the yards to his packing house. At length centralization was effected by the organization of the Union Stock Yards in 1865 which provided facilities for the maintenance as well as the slaughtering of animals.²¹

Furthermore, the westward direction of agricultural expansion may be considered as a factor influencing Chicago's preeminence in this industry. It was partly responsible for Chicago's wresting of the leadership in pork packing from Cincinnati during the Civil War.²² The ancillary leather industry developed greatly in the 1848-1877 period. In the course of 15 years, 1855-1870, Chicago's leather manufacturing establishments grew 900 per cent, producing over \$2,000,000 of goods in 1870.²³ The wartime demands for cavalry equipment between 1861 and 1865 also greatly stimulated the industry.²⁴ The post-civil war period (1865-1877) saw a continued growth of the industry. The Chicago fire of 1871 did not cripple the leather industry as much as it did other industries because the majority of the tanneries were located at a safe distance from the burnt district.²⁵

Other industries similarly allied to and dependent upon the meat packing industry—soap, candles and cooperage—also grew rapidly in this period.²⁶

Brewing. The influx of large numbers of Germans into Chicago during the 50's and 60's was responsible for the rapid development of the brewery industry in this period. The financial exigencies of the Civil War also assisted the industry, for the wartime excise on distilled liquors compelled the poorer classes to substitute comparatively low-priced beer for high-priced whiskey. Despite an increase in the industry of more than 300 per cent—the output in Cook County was over \$5,520,000 in 1870.²⁷ Chicago ranked below St. Louis and Cincinnati as a brewing center.²⁸ The distilled and rectified liquor industry, prior to the Civil War, received about one-fourth of the total investment in alcoholic beverages.

Furniture. In the new group of leading industries may be found the furniture, men's clothing, boot and shoe, and machinery industries. The modest output of tables, chairs, and bedsteads in the later 1840's greatly increased during the succeeding decade because of remarkable improvements in machinery. The invention of the band saw and the automatic lathe and the adaptation of the rotary-cutting principle to wood working gave a tremendous impetus to the industry. These technological developments coupled with the advantages

¹²Hill, *op. cit.*, pp. 258-259.

¹³*Ibid.*, p. 273; Karlin, *op. cit.*, p. 69; Chicago Association of Commerce, Twenty-first anniversary 1904-1925. *Survey of Foods, Chemicals and Drugs* (Chicago: 1925), p. 12. (Henceforth this will be referred to as *Survey of Foods, Chemicals and Drugs*.)

¹⁴Hill, *op. cit.*, p. 270 and 273.

¹⁵Pierce, *op. cit.*, II, 100-101; Karlin, *op. cit.*, p. 69.

¹⁶Pierce, *op. cit.*, II, 98.

¹⁷Hill, *op. cit.*, p. 263.

¹⁸Esther Elizabeth Espenshade, "The Economic Development and History of Chicago 1860-1865, 1931." Typewritten thesis (M.A.), University of Chicago, pp. 71-72.

¹⁹*Ibid.*, p. 67.

²⁰*Ibid.*, p. 77.

²¹Hill, *op. cit.*, p. 270; Espenshade, *op. cit.*, pp. 77-78; *Survey of Foods, Chemicals and Drugs*.

²²Pierce, *op. cit.*, II, 94 and 117; Espenshade, *op. cit.*, p. 70.

²³Ninth Census, p. 649.

²⁴Pierce, *op. cit.*, II, 101-102; Chamberlin, *op. cit.*, p. 134.

²⁵Moses and Klrkland, *op. cit.*, II, 442.

²⁶Annual Review, 1854, p. 58; Pierce, *op. cit.*, II, 102; Espenshade, *op. cit.*, p. 99.

²⁷Ninth Census, p. 649.

²⁸Pierce, *op. cit.*, II, 89.

that attracted capital investment, notably the multiplied distributing facilities growing out of the ever expanding network of railroads, the fast growing population of Chicago and its hinterland, the large supply of low paid laborers, and the immense lumber trade, released Chicago after 1868 from its former dependence on the East for furniture. The city by the lake, with an output in 1870 in excess of \$2,000,000,²⁰ could now satisfy any and all demands of the Middle West for furniture of all types.²⁰ The great fire of 1871 consumed fully one-half of the furniture factories of this city. This blow, coupled with the panic of 1873, halted for a time the natural development of the industry, but, with the passing of hard times in 1877, it again assumed its important role in the city's economy,²¹ the census of 1880 indicating that Chicago surpassed every city in the nation save New York in furniture manufacturing.²²

Men's Clothing. Almost as phenomenal in its development was the men's clothing industry between 1861 and 1870. During the early days of Chicago, custom tailoring was an unknown art, the citizenry being content, after the initial period of "linsey-woolsey" had passed, to purchase their clothing ready-made from eastern manufacturers.²³ By 1859 a very considerable wholesale and retail trade in men's clothing had developed, totaling \$2,500,000 annually.²⁴ But the men's clothing industry was barely in its infancy. Such as it was, it was still in the domestic stage of manufacture, with women receiving from entrepreneurs the several parts of a garment and sewing them into completed suits in their homes.²⁵ The Civil War, with its tremendous demand for uniforms, and the introduction of technological improvements, such as the sewing machine, transformed the tiny industry.²⁶ Clothing sales soared to \$12,000,000 in 1863 and 85 firms engaged in the manufacture of men's and women's clothing had been established by 1870.²⁷ The huge government orders necessitated an enlargement of the scale of the industry—in short, the introduction of factory techniques. Large establishments, factory buildings erected for the specific purpose of clothing manufacture, standardization of styles, processes and sizes, a greater subdivision of labor, and more efficient methods of manufacture resulted. The knowledge gained under wartime conditions of sizes required in quantity enabled manufacturers, upon the return of peace, easily to supply civilian demands for clothing. In short, during the war years, Chicago obtained a firm foothold in the clothing industry which was soon to be expanded greatly.²⁸

Boots and Shoes. Boot and shoe manufacture, ranking seventh among Chicago's industries prior to the Civil War, occupied an important place. Like the men's clothing industry, the boot and shoe industry was transformed during the Civil War period. Wartime demands for footwear together with technological changes in production resulting from the invention of the sewing machine, led to a tripling of the number of men employed and a quintupling of the annual wages paid, while the value of the product soared 15 times.²⁹ The industry, having entered

the factory stage by 1865, embarked on a period of rapid technical development as a consequence of improvements in power machinery.³⁰ The Chicago fire of 1871 dealt a very heavy blow to the industry by its destruction of every boot and shoe factory and wholesale house save one. But the industry rose phoenix-like out of its ashes and was one of the very first to recover.³¹ The panic of 1873 was successfully weathered and the industry emerged in a prosperous condition, primarily because Chicago manufacturers, located in the hide and leather center of the West, were able to select superior materials. Again, their possession and use of the best machinery of the day enabled them to compete successfully with eastern manufacturers.³²

Machinery. Another rapidly expanding activity was the metals and machinery industry which, by 1860, made up about one-fifth of the city's industrial output.³³ The McCormick Harvester Company produced 4,000 reapers annually by 1857 and the Atkins Self-Raking Reaper and Mower Company, which was established only four years later (in 1853), turned out 1,800 machines annually. A threshing machine factory also made its appearance in Chicago around 1856.³⁴ This great development resulted from the demands of the rapidly increasing farm population of the West and Northwest for labor-saving devices.³⁵ There was a similar demand from the same region for steam engines, boilers, etc., which was largely supplied by Chicago.³⁶

Even more phenomenal was the development of the metals and machines industry, especially the agricultural machinery division, during the Civil War period. The enlistment of thousands of western farmers in the Union armies during the Civil War led to a great diminution of farm workers and made imperative an increased use of machinery. Furthermore, the Civil War itself stimulated a demand for harvested crops and thereby assisted in the development. The poor crops in Europe, which caused the export of large amounts of American breadstuffs, operated to the same end.³⁷ The advance of the industry in the decade from 1860 to 1870 is revealed in an increase of nearly 300 per cent in value of products, Cook County being the second most important center in the Union for the manufacture of harvesters and threshers.³⁸ In the metals and machinery industry as a whole, Chicago attained the rank of fifteenth among American cities, representing a faster advance than that achieved by any other city.³⁹

Iron and Steel. Distinct from the metal products industry was the fledgling iron and steel industry. Prior to the Civil War no pig iron was manufactured in Chicago. Ohio, Pennsylvania and, to a much lesser degree, Missouri and Scotland furnished Chicago's rolling mills and other iron works with their supplies.⁴⁰ But with the opening of the great iron deposits of the Upper Peninsula of Michigan in the later 1850's, Chicago began the phenomenal development which has made her, next to Pittsburgh, the greatest iron and steel center of the present day. With the coal mines of Illinois and Indiana close by, she was situated more favorably in respect to ore,

²⁰Ninth Census, p. 649.

²¹Andreas, *op. cit.*, III, 733; *Annual Review*, 1854, p. 57.

²²Andreas, *op. cit.*

²³*Ibid.*, p. 734.

²⁴*Ibid.*, p. 726.

²⁵Pierce, *op. cit.*, II, pp. 109-110.

²⁶Espenshade, *op. cit.*, pp. 102-103.

²⁷Pierce, *op. cit.*, II, 110; Alfred Decker, "Millions of Wearers Buy Clothing Made in Chicago," *Chicago—The World's Youngest Great City* (Chicago: American Publishers Corporation, 1929), p. 120.

²⁸Pierce, *op. cit.*, Espenshade, *op. cit.*

²⁹Espenshade, *op. cit.*; Decker, *op. cit.*

³⁰Espenshade, *op. cit.*, pp. 100 and 101-102.

³¹Victor S. Clark, *History of Manufactures in the United States 1860-1914*. Vol. II (Washington, D. C.: Carnegie Institution of Washington, 1928), p. 131.

³²Andreas, *op. cit.*, pp. 727-728.

³³*Ibid.*, p. 728.

³⁴Espenshade, *op. cit.*, p. 86.

³⁵Dumond, *op. cit.*, p. 122.

³⁶*Annual Review*, 1855, p. 26.

³⁷*Annual Review*, 1854, p. 58; *Annual Review*, 1855, p. 23.

³⁸Espenshade, *op. cit.*, pp. 92-93; Pierce, *op. cit.*, II, 113.

³⁹Clark, *op. cit.*

⁴⁰Espenshade, *op. cit.*

⁴¹Hoyt, *op. cit.*, p. 59; Pierce, *op. cit.*, II, 115.

coal, and freight rates than her rival Cleveland, and outstripped her within a decade. These factors together with the demands of the Civil War led Chicago to develop from merely a manufacturer of pig iron and fabricator of iron products into a center of iron and steel manufacture. Thus, in the steel industry, Chicago advanced from zero in 1860 to the rank of fifteenth in 1870, and fourth by 1880 among the cities of the United States.⁵¹

Building Materials. As in the case of the preceding industrial period, 1833-1848, the several branches of the building industry were the most important among Chicago's lesser enterprises: building materials, the three-fold newspaper, job printing and publishing, the railway and railway supplies industry, the tobacco industry, the carriage and wagon industry, the fur industry, and the confectionery industry. Sashes, planks, doors, shingles and blinds were constructed from the abundant supply of lumber imported into Chicago from the Michigan and Green Bay saw mills. The growing city, largely built of wood prior to the Chicago fire of 1871, and the wooden villages of Chicago's hinterland easily and speedily absorbed these products.⁵² Brick manufacture flourished in Chicago and nearby Cleaverville; during the 1852-1870 period the number of brickmaking concerns quadrupled.⁵³ Another subdivision of the building industry, paint manufacture, developed greatly during the post-civil war period as the result of the widespread cultivation of flax in Illinois and other prairie states and the extraction of oil from the linseed product.⁵⁴

Printing and Publishing. The financial weakness which had characterized the newspaper, job printing, and publishing industry of an earlier day was superseded during the Civil War period by a great prosperity, which perhaps was the result of general prosperity and a keener interest in the news. By 1868, 57 Chicago firms were engaged in the publication of newspapers and periodicals. There was a similar activity in the job printing business, which now became increasingly an independent industry because of the decision of the several newspapers to dispense with their job printing departments.⁵⁵ As to publishing, no publishing house existed in 1860—book publishing being done by job printers. By 1870, however there were two specialized printing and publishing concerns in the city.⁵⁶

Railway Supplies. In respect to the new railroad and railway supplies industry, Chicago, while becoming an even greater center of transportation, played a very minor role at the outset of the period. By 1852, however, it became clear to Chicago's leaders that the city would shortly become a great railroad center and they carefully fostered the manufacture of cars and locomotives. One firm alone, Stone and Boomer, manufacturers of railway equipment, in the course of only three years (1852-1855) became the most important company of its kind in the West, having contracts with 24 different railroads in Illinois, Wisconsin, and Minnesota. Other and similar firms developed in Chicago during the 1850's and 1860's.⁵⁷ Car-building and repairing were carried on in shops owned by the railroad companies. The iron and steel used for these purposes were imported largely from eastern foundries and furnaces.

Wagons and Carriages. The wagon industry likewise developing steadily before 1860, advanced very rapidly

during the next decade, largely because of the supply requirements of the Union armies and the expanding agricultural acreage of the middle western states.⁵⁸ The carriage industry, on the other hand, continued to lag, largely because of the poor paving of Chicago's streets and the lack of fine drives. The Chicago fire of 1871 and the quick succeeding depression of 1873 created a period of "hard times" and the demand for carriages slackened even more. Not until about 1875 did the carriage industry begin to recover and by 1880 it came into its own with the partial completion of Chicago's park system.⁵⁹

Fur Manufacture. The fur industry was of considerable importance in this period, primarily because Chicago, strategically located at the terminus of the majority of middle-western railroads, was able to tap the great fur trade of the Mississippi Valley.⁶⁰

Miscellaneous and very minor industries in Chicago during this period were musical instruments, dating from 1854 and 1855, when Messrs. Green, Knaub, Stone and Preston began their manufacture of melodeons and pianos; wooden-ware manufacture (1854); paper boxes; starch making;⁶¹ watch making; sugar refining; jewelry manufacture; and lead-using manufactures.⁶²

Summary. With respect to the progress and development of industry in the 1848-1877 period, it may be said that, before 1860, Chicago was still essentially a commercial city whose manufactures had developed almost entirely to supply local needs. Investments in real estate and ventures such as the produce trade were much larger than those in manufactures, undoubtedly because of the much larger immediate returns. After 1860 Chicago's industries changed their role and assumed a national importance, brought about by the greatly expanded agricultural trade resulting from the Civil War, the technological changes in many industries, and the industrial demands of the war itself. By 1870 capital invested in manufactures in Cook County had soared 800 per cent over the figure reached in 1860. It seems probable that only a relatively small fraction of this new capital was of local origin.⁶³ A population of 213,000, or upwards of one-half of the people in the city, was already supported by manufactures. Indeed, in 1870 Cook County's industrial output totalled \$92,000,000 as compared with \$61,000,000 for all the rest of the state.⁶⁴ Furthermore, one-half of the employees in the state worked in Chicago.⁶⁵ During the 1860's the number of industrial establishments, the amount of wages, and the gross value of product increased almost seven fold, while the number of employees grew almost six fold.⁶⁶

This phenomenal development was checked, it is true, by a brief period of stagnation after the Civil War. Then the remarkable recovery effected after 1866 was presently to be retarded by the Chicago fire of 1871 and the panic of 1873. But by 1877 recovery was in full swing and the following year registered the most prosperous conditions in Chicago industry up to that time. In the five years after 1873 Chicago's factories grew from 690 to 2,000.⁶⁷ Yet Chicago industry still lagged behind real estate as the most popular form of local investment.

⁵¹Espenshade, *op. cit.*, pp. 99-110; Andreas, *op. cit.*, III, 743.

⁵²Moses and Kirkland, *op. cit.*, p. 434; Andreas, *op. cit.*, III, 743.

⁵³Chicago Association of Commerce. *Chicago—The Great Central Market*, p. 65. (Henceforth this work will be referred to as *Chicago—The Great Central Market*.)

⁵⁴Dumond, *op. cit.*, p. 120.

⁵⁵*Ibid.*, p. 122.

⁵⁶Pierce, *op. cit.*, II, 148-149.

⁵⁷Pogart and Thompson, *op. cit.*, map facing p. 392.

⁵⁸Cole, *op. cit.*, p. 365.

⁵⁹Helen Rankin Jeter, *Trends of Population in the Region of Chicago* (Chicago: The University of Chicago Press, 1927), p. 46.

⁶⁰*Reports of the Trade and Commerce of Chicago, 1873 and 1878* (Chicago: The Chicago Board of Trade).

⁵¹Andreas, *op. cit.*, II, 674.

⁵²Espenshade, *op. cit.*, p. 99.

⁵³Pierce, *op. cit.*, II, 105.

⁵⁴Clark, *op. cit.*, II, 125-126.

⁵⁵Fagan, *op. cit.*, pp. 27-28.

⁵⁶Espenshade, *op. cit.*, pp. 103-104.

⁵⁷Andreas, *op. cit.*, III, 568-569.

Eastern capital was for years required to assist Chicago's industrial undertakings.⁶⁸

With regard to the kinds, skills, and nationalities of Chicago workmen during this period, it may be said that 34 per cent of them performed unskilled work, followed in order by such skilled craftsmen as carpenters, tailors, painters, brick-masons, milliners, and bootmakers. Over 80 per cent of all skilled workmen in the manufacturing and chemical industries of Chicago were to be found in the ranks of the building trades workers,

⁶⁸Pierce, *op. cit.*, II, 148-149.

wearing apparel makers, machinists, iron workers, wood workers, and finishers. More foreigners in proportion to their total numbers than Americans were represented in the manufacturing and new chemical industries, which accounted for 61 per cent of the Germans and 54 per cent of the Irish. Unskilled labor numbered more than one-fourth of the Americans and more than one-half of the Irish, but less than one-third of the Germans, who predominated in the skilled industries.⁶⁹

⁶⁹*Ibid.*, pp. 151-152.

Chapter IV

THE AWAKENING GIANT, 1877-1897

An age of growing economic maturity characterized by the beginnings of industrial consolidation and the development of trusts and combines, especially in the iron and steel industry, and by a widespread adoption and use of older manufacturing processes and the invention of new ones featured Chicago's third period of industrial development, 1877-1897. The industries which had gained primacy or had created the basis for primacy during the Civil War and reconstruction periods—namely, iron and steel, machinery, especially agricultural machinery, meat packing, and men's clothing—continued to dominate Chicago's industrial horizon.

Iron and Steel Industry. Certainly the most phenomenal growth in all of Chicago's major manufactures was registered in the iron and steel industry. This may be attributed to the widespread adoption of the Bessemer process of refining steel (It had been invented in 1864.),¹ to the increasing demand for agricultural machinery and implements on the part of Chicago's agricultural hinterland,² to the growing requirements of industry,³ and to the development of a more efficient method of management, the vertical trust. The older steel plants, the North Chicago Rolling Mill and the Union Works, had been founded respectively on the north and south branches of the Chicago River by Captain E. B. Ward in 1857 and Orrin W. Potter, the president of the latter company, in 1870.⁴ These were joined in 1889 with their competitors, the Chicago Iron Company, which had been founded in 1868 and was later known as the Union Steel Company, the Joliet Steel Works which was located at Joliet, Illinois, and the Bay View plant of the Milwaukee Iron Company to form the new Illinois Steel Company. A partial precedent for this development had been afforded by the control exercised over the Chicago Iron Company by the North Chicago Steel Company and the exchange of materials, men, and services by both companies.⁵ A vertical combination,⁶ the Illinois Steel Company, was the first great merger in the iron and steel industry in American history.⁷ This new organization possessed raw materials and all the necessary means of production, having the controlling interest in some of the largest Bessemer ore mines of Wisconsin, Michigan, and Minnesota and owning directly a large tract of cok-

ing coal land in the Connellsville, Pennsylvania, district.⁸ Later on it added to its control more coal and coke lands in West Virginia, iron lands in Wisconsin, timber lands in Michigan, and stone quarries in Indiana.⁹ Designed to effect economies in the cost of management, the distribution and allotment of raw materials, and the diversification and specialization of output, the new company accordingly at once purchased large additions for its South Chicago plant and abandoned its uneconomical units. Furthermore, in 1891 it doubled its capital to \$50,000,000 for necessary plant extensions, which eventually included a foundry manufacturing cast-iron pipe, a universal plate mill, and an open-hearth furnace. Despite the losses caused by the panic of 1893, the company weathered the economic storm and quickly recovered.¹⁰

Machinery. Complementing the growing steel industry was the manufacture of machinery, especially agricultural machinery. As noted in Chapter III, the growth of the manufacture of agricultural machinery may be attributed to the needs of Chicago's farming back country. Indeed, the Chicago area dominated the manufacture of harvesters and mowers.¹¹ Shortly after the close of this period, in 1902, the agricultural implements industry, paralleling the recent developments in the manufacture of iron and steel, underwent consolidation with the incorporation of the International Harvester Company. Acquiring all but four of the largest harvester companies in the country, the new organization evolved from the parent and largest plant, the McCormick Harvesting Machine Company of Chicago, and included, in the Chicago area, the Plano Manufacturing Company, the Warder, Bushnell and Glessner Company, and the Milwaukee Harvester Company.¹²

As for the other branches of machinery manufacture, it may be said that growth was rapid, especially in the case of high grade machine tools, fabrication of which increased greatly in the early 1890's, in response to the demand of the industrial development of the Middle West.¹³ Chicago's unequalled railway facilities also assisted the development of her machine tool industry, for shipments in response to orders emanating from middle western cities could be started on the day of receipt of the orders.¹⁴

¹Dumond, *op. cit.*, p. 123.

²Fagan, *op. cit.*, pp. 4-5; *United States Steel in the Chicago District*, Wednesday, April 26, 1939, p. 2 (Henceforth this latter work will be referred to as *United States Steel*.)

³*United States Steel*, p. 2.

⁴Charles Longenecker, "A Pioneer Plant Both in Time and in Practice," *Blast Furnace and Steel Plant*, August, 1938, p. 6; *Chicago—The Great Central Market*, p. 20; Dumond, *op. cit.*, p. 123; Bogart and Thompson, *op. cit.*, p. 390.

⁵"Achievements," *Blast Furnace and Steel Plant*, August, 1938, p. 3; Clark, *op. cit.*, II, 235 and 270.

⁶Clark, *op. cit.*, II, 237.

⁷Longenecker, *op. cit.*, p. 8; Dumond, *op. cit.*

⁸Clark, *op. cit.*, II, 237.

⁹*Ibid.*, p. 238.

¹⁰*Ibid.*, pp. 237 and 238.

¹¹*Ibid.*, p. 361; Ernest Ludlow Bogart and John Mabry Mathews, *The Modern Commonwealth*, Vol. IV of the *Centennial History of Illinois* (Springfield: Illinois Centennial Commission, 1920), p. 109.

¹²Bogart and Mathews, *op. cit.*, p. 110.

¹³*Chicago—The Great Central Market*, p. 44.

¹⁴Chicago Association of Commerce, Twenty-first Anniversary 1904-1925, *Survey of the Metals Trades and Allied Industries* (Chicago, 1925), p. 13.

Meat Packing. The primacy of Chicago in the meat packing industry not only during this period but also during practically all of the succeeding one (1897-1918) may be ascribed not to any new factors but rather to a development of most of the ones which during the 1848-1877 period had advanced her far along the path toward her present position. These factors included superior railway connections, continued leadership of a very high order on the part of the captains of the industry, unequalled facilities for the care, as well as the slaughtering, of animals, and monopoly of the by-products industry. The scale of the meat packing industry is indicated by the fact that as early as 1885 the purchases at the Chicago stock yards exceeded \$1,000,000 daily.¹⁵

Men's Clothing. Similarly rapid was the advance of the men's clothing industry. New factors assisted the growth of this already flourishing activity. Immigration of hundreds of thousands of Europeans to the reunited republic increased the demand for ready-made clothing and also furnished much of the labor for its manufacture. The development of thousands of new communities in the trans-Missouri West and Southwest also contributed to the demand. Chicago became not only the men's clothing capital for these groups but also the trading center for the entire industry. Merchants hailing from every quarter of the American union met in Chicago. The strength of the industry is indicated by the fact that in 1900, a few years after the close of this period, there were 18,000 clothing workers in Chicago and the retail value of ready-made clothing produced was about \$80,000,000.¹⁶

Furniture. The furniture industry, Chicago's fourth largest enterprise,¹⁷ continued during the 80's and 90's the remarkable development of the later 70's. By 1885 Chicago had outstripped New York both in number of employees and in the amount of the annual product. Chicago led the world in the manufacture of parlor furniture, her annual sales of upholstered goods and frames equalling those of New York, Boston, and Cincinnati combined. The factors operative in the development of the preceding industrial period (1848-1877) continued in this one, with but few new important additions save that of increasing mechanization. Decentralization of industry, a prominent feature of Chicago's present-day industrial development, occurred in the furniture industry at this time. Canal Street and State Street in the vicinity of Adams Street lost their positions as the manufacturing centers of cabinet and parlor furniture respectively. Increase in rentals forced an exodus of the industry to other parts of the city.¹⁸

Second Rank Industries. Of Chicago's second rank industries — namely, boots and shoes, newspapers, brewing and baking — the first was undoubtedly the most important. Boot and shoe manufacture flourished primarily because the rich mining districts of the new territories of the Dakotas, Colorado, Arizona and New Mexico attracting railroads and settlers, became increasingly the province of Chicago salesmen.¹⁹ Again, the mechanical system of manufacture of footwear was perfected by 1895, enabling Chicago boot and shoe manufacturers to produce their product with only about one-ninth of the time and expense required in 1865.²⁰ Lastly, the increasing amount of capital invested in the industry aided its

development.²¹ Outside of New England, Chicago was the leading city in the industry, producing goods to the value of more than \$7,000,000 annually.²²

Newspapers. The Chicago newspaper industry continued the steady development ushered in by the Civil War period. Administrative improvements assisted its development: the organization of the Western News Company and the formation of the Western Associated Press.²³ The industry also experienced an enormous increase in number of publications in the early years of the period, the expansion by 1870 to a total of 505, being greatly overshadowed by that during the following decade when the number rose to 1,017, despite the Chicago fire of 1871 and the depression of 1873.²⁴ This mushroom development continued until about 1885. Thereafter a gradual decrease in the importance of weekly newspapers as compared with dailies ensued. A few outstanding papers, such as *The Inter-Ocean* (1872), *The Chicago Daily News* (1875), *The Chicago Herald* (1881), *The Chicago Evening Post* (1889), and *The Chicago Chronicle* (1894) increasingly dominated the field. After 1885 fewer newspapers were founded. The new publications had better financial backing or were the organ of a political party. Henceforward, fewer papers were entirely discontinued, and defunct newspapers usually consolidated with another paper. The new financial strength was gained largely by the abolition of the weekly editions.²⁵

A very flourishing industry at this time was brewing. Doubling their already large output during the 14-year period from 1871 to 1885, the brewmasters thereby made Chicago one of the chief beer-producing centers in the United States.²⁶

The early 1890's marked the beginnings of the development of one of modern-day Chicago's major activities — the baking industry. Prior to 1890, most of the baking in the Middle West was conducted in individual homes, and large eastern baking firms monopolized the trade in the simpler brands of candies and crackers. Local bakers, despite a steady development from 11 establishments in 1860 to 127 in 1880,²⁷ were unable to meet the strong eastern competition and were about to be driven from the field. Roused by this threat and profoundly irritated by the belief of eastern baking firms that the Middle West was their province and should remain so forever, Chicago's bakers banded together and in 1890 formed the American Biscuit and Manufacturing Company. The aims of the new organization were protection from eastern manufacturers, better quality of food products, enlarged consumption, a reduction of expenses and a corresponding increase of profits, and, last but not least, substitution of their own products for those made in individual homes.²⁸

Shipbuilding, the last of Chicago's second rank industries, was not, strictly speaking, an important enterprise at this time. The great fleets of lake ships were mostly built in other Great Lakes ports. However, a Chicago firm, the Chicago Shipbuilding Company, constructed cargo boats at Bay City, Michigan, and another company built freight boats and a steel passenger steamer in Chicago (1890).²⁹

¹⁵Fagan, *op. cit.*, p. 29.

¹⁶Clark, *op. cit.*, II, 471.

¹⁷Fagan, *op. cit.*, p. 29.

¹⁸*Ibid.*, p. 28.

¹⁹*Ibid.*, p. 29-30.

²⁰Chicago—*The Great Central Market*, p. 20.

²¹Spenshade, *op. cit.*, pp. 104-105; Ursula B. Stone, "The Baking Industry with Special Reference to the Bread Baking Industry in Chicago, 1931." Typewritten thesis (Ph.D.), University of Chicago, p. 15.

²²*Industrial Chicago*, III, 780-781.

²³Clark, *op. cit.*, II, 325-326 and 327.

¹⁵Clark, *op. cit.*, II, 507.

¹⁶Decker, *op. cit.*, p. 120.

¹⁷Andreas, *op. cit.*, III, 734.

¹⁸Moses and Kirkland, *op. cit.*, II, 441.

¹⁹Andreas, *op. cit.*, III, 728.

²⁰Clark, *op. cit.*, II, 765.

Chicago's minor industries were canning and tin plate, cottonseed oil, cordage and bagging. In regard to the first of these, it may be said that Norton Brothers, owners of a very large can-making firm, decided to manufacture tin plate in order to avoid the uncertainties and embarrassments associated with dependence on Great Britain for supplies. Hitherto they had purchased \$1,000,000 worth of tin plates abroad each year. Accordingly they imported tinning machinery from that country. Within a few years labor costs for tin plate manufacture in Chicago, because of the improvements in machinery, were only one-tenth of the former amount.³⁰ Cottonseed oil was used in considerable amounts—300,000 barrels annually in Chicago in the '90's alone—mostly in the manufacture of food fats.³¹ At the outset of the period the cordage and bagging industry was ancillary to the manufacture of harvester machinery, but eventually became practically a distinct business.³²

As for the progress of industry in this period, Chicago manufacturing establishments increased seven fold be-

tween 1870 and 1890.³³ The city's rank among the eight leading industrial cities of the nation changed from seventh in 1870 to fifth in 1880 and again to third in 1890.³⁴ Even more rapid was her advance in the ratio of increase in capital invested in industrial plant—more than nine fold between 1870 and 1890.³⁵ In terms of her standing in number of establishments, capital invested, and value of products, among cities mentioned above, Chicago moved from seventh place in 1870 to fifth in 1880 and to third in 1890 in the first category; from sixth place and 1890 respectively in the last category.³⁶ In terms of and from fifth place in 1870 to third and second in 1880 and 1890 respectively in the last category.³⁶ In terms of advancements and changes in structure, Chicago's industries were characterized in this period by a growth of the factory system, an increasing application of science to industry, especially in meat packing, and the beginnings of the development of trusts and monopolies.

³³Earl Shepherd Johnson, "The Natural History of the Central Business District With Particular Reference to Chicago, 1941." Typewritten thesis (Ph.D.), University of Chicago, p. 203 and Table 14, p. 204.

³⁴*Ibid.*, Table 17, p. 205.

³⁵*Ibid.*, p. 203 and Table 15, p. 204.

³⁶*Ibid.*, pp. 203 and 205 and Tables 16 and 17, p. 205.

Chapter V

THE GOLDEN AGE, 1897-1918

The period from 1897 to 1918 was the Golden Age of Chicago's industrial development. The former "Big Three" in order of importance—men's clothing, meat packing, and furniture—held first ranking positions in Chicago and the nation down until the World War. Then printing and publishing displaced furniture as Chicago's third ranking industry, while iron and steel rapidly forged ahead until it assumed the role of Chicago's most important industry and brought the city up to national rank just behind Pittsburgh, which was still the nation's most important center. But this period also saw, especially in its last years, the development of parallel industries in other cities which at first threatened and at length over-topped in the succeeding period of industrial development (1918-1940) the erstwhile position of national predominance enjoyed by the "Big Three." Yet the period was not an unprogressive one, for new or greatly enlarged industries appeared, offsetting the decline of the older ones.

Iron and Steel Industry. The marked trend toward consolidation of the iron and steel industry in the Chicago district after 1888, which was noted in the last chapter, continued at an accelerated pace in this period. A new merger including the Illinois Steel Company, the Minnesota Iron Company, and the Lorain Steel Company with plants at Lorain, Ohio and Johnstown, Pennsylvania was formed in 1898. The new organization, known as the Federal Steel Company, had a capital stock of \$200,000,000 and controlled important ore lands in the Lake Superior district, transportation from the ore fields to Chicago, mineral lands and coke ovens in Pennsylvania, and a railroad between Chicago and Joliet.¹

Paralleling this development was the merger effected in the same year in a specialized branch of the steel industry, the wire and wire products subdivision. Attempts in 1897 to combine the principal wire works in the United States having been unsuccessful, some of the eastern works withdrew from the plan. Thereupon, the western plants, which manufactured chiefly fence and nail wire and coarse wire products, made a com-

bination of their own, the American Steel and Wire Company of Chicago, the largest Illinois corporation yet organized in that line. The new corporation was born in January, 1898.² It embraced 14 plants all located west of the Alleghenies, among which were the Ellwood Manufacturing Company and the Ellwood Wire and Nail Company of De Kalb, the Washburn and Moen Manufacturing Company of Waukegan, the Consolidated Barb Wire Company and the Laidlaw Bale Tie Company of Joliet, and the Garden City Wire and Spring Company of Chicago. Its capital was \$87,000,000.

But these mergers and pools, despite their magnitude, were soon to be overshadowed by the gigantic United States Steel Corporation. Formed in 1901, the new organization included 11 companies, which themselves had been created by prior amalgamations of nearly 200 existing concerns. Two of these firms were the Federal Steel Company and the American Steel and Wire Company. The reasons for the formation of the new combine are to be found partly in a desire to obtain a larger working capital and funds for plant extensions which were necessitated by the great development of the iron and steel industry, and partly in the plan to eliminate both middlemen handling raw materials and original producers of raw materials by effecting a united control of all the processes of production.³

The most significant activity of the new corporation, in so far as the iron and steel industry in Chicago was concerned, was the development of the Gary steel district in 1906 in order to meet the increasing demands of the Middle West for steel.⁴ Under the leadership of Judge Gary, chairman of the United States Steel Corporation, the modern-day Gary district, then a long series of sand dunes in northwestern Indiana adjacent to Lake Michigan and the Illinois-Indiana state line,

²*Ibid.*, pp. 657-658; *Report of the Commissioner of Corporations on the Steel Industry. Part 1: Organization, Investment Profits, and Position of the United States Steel Corporation* (Washington, 1911), July 1, 1911, Table 3, p. 107; Bogart and Matthews, *op. cit.*, p. 108.

³Clark, *op. cit.*, II, 589. *United States Steel in the Chicago District*, Wednesday, April 26, 1939, p. 2.

⁴Longenecker, *op. cit.*, pp. 5-6; *United States Steel in the Chicago District*, Wednesday, April 26, 1939, pp. 2-3.

¹Clark, *op. cit.*, II, 580-581 and 589-590.

was selected for the development. The reasons for the selection of this site were that it was close to the necessary water and coal supplies indispensable for efficient iron and steel manufacture, had all-water connections with the iron mines of the Lake Superior district, and adjoined a city capable of furnishing an abundant labor supply.⁵ The new enterprise grew rapidly and, anticipating for a moment, we may indicate that in recent years it has been, together with the adjacent steel mills in southern Cook County, second in national productive capacity. The scope of the company is indicated by the fact that in 1940 it employed approximately 30,000.⁶

Henceforward, under the coordinated policies of the United States Steel Corporation, the South Chicago plant was the capital of stainless steel manufacture for all subsidiaries. Alloy steel was also produced here. Manufacturers of heavy industrial items, (including automobiles, farm implements, railroad and building supplies) and consumers' goods, (such as containers, household fixtures, netting, screening, fencing, etc.), consumed the output of the South Chicago mills during the 1897-1918 period and even more so during the succeeding one.⁷

The importance of these new and gigantic developments in the iron and steel industry is to be found not only in the fact that they have made Chicago the second most important iron and steel producing center of the nation, but also in the consideration that the presence of this enormous industry in the Chicago district has induced other manufacturers using steel in their products and desiring to obtain it cheaply at the source of production to settle here.⁸ In short, in contrast to certain early Chicago industries, the iron and steel industry was an expanding industry during the 1897-1940 period and promises to continue to play the role of parent to other manufacturing operations.

Men's Clothing. The primacy of the men's clothing industry in Chicago is reflected in a total of 34,297 workers in 1919 and a product valued at \$83,000,000, figures which represent respectively more than a doubling of and an increase of 150 per cent over the parallel figures for 1890. The growth of this manufacture in Chicago was swifter than that of the United States as a whole. By 1914, the Chicago market had attained a position of greater importance relative to the entire industry than it has had at any time before or since.⁹

The importance of the industry rested in part on the favorable location of the Chicago market. Its proximity to the great markets of the South and West not only permitted buyers to visit Chicago easily and to receive deliveries speedily, but also enabled Chicago producers to be cognizant of their consumers' needs and to specialize their products accordingly. Since the special order industry with its emphasis on speed of delivery became an integral part of the manufacture of men's clothing, Chicago's favored position became even more significant, for it enabled Chicago firms to make deliveries at least two days sooner than their more distant competitors.¹⁰ Again, knowing the differing clothing preferences of their western and southern customers, Chicago manu-

facturers stole a march on their eastern rivals, by sending what was best suited to the locality.¹¹

Another factor of importance was the high reputation of Chicago-made clothing. This resulted in part from the use of excellent materials as well as from the use and employment of a superior labor force. The Czech tailors employed in Chicago were the best coat makers in the business and numerous Germans and Swedes, many of them immigrants trained in their native lands, were also workers of the highest type.¹² Extensive advertising, appearing in such important magazines with national circulations as *Collier's* and the *Saturday Evening Post*, emphasized the value of tailoring products by such ready-made firms as Alfred Decker and Cohen; Hart, Schaffner and Marx; and Kuppenheimers'; and by such special order houses as Ed. V. Price and Company, Scotch Woolen Mills, and Royal Tailors.¹³ By their emphasis on the qualitative and creative side of the industry, Chicago tailoring leaders carried on pioneer work in the education of the American public in the worth of finer ready-made clothing.¹⁴

The organization of the industry in Chicago during this period as well as in the succeeding one was a closely knit unit. It was concentrated in a relatively small area about the main business district. The area located within four miles of the corner of State and Madison Streets was the locale of at least 80 per cent of the firms. The several subdivisions of the various firms were located in the Loop district—the sales offices for the convenience of visiting buyers, and the cutting and shipping rooms and some shops because of the efficiency of central location for receiving and shipping goods and the avoidance of the expense of operating additional establishments. A small decentralization of the industry developed in the 80's when the several firms moved their offices and cutting rooms from the heart of the Loop district to the lower rent area along its western edge. A somewhat greater decentralization gradually ensued thereafter when some firms, in an attempt to combat the continued rise of rents, retired altogether from the Loop area and started a branch district across the Chicago River. The assembly rooms, on the other hand, were located from two to four miles out of the Loop, near the workers' homes.¹⁵

In regard to the workers themselves, it may be said that at the turn of the century, they were chiefly Swedes, Czechs, Russians, and Poles. The Swedes, primarily vest makers, were concentrated in 1900 at the foot of Clybourn Avenue, about a mile north of the fork in the Chicago River. Even before 1900, however, this national group had begun to abandon this activity and to enter other occupations. The result was the virtual extinction of the district.¹⁶ The Czechs, having as their bailiwick in 1900 the territory between 17th and 22nd Streets and tributary to Blue Island Avenue, lived under sweatshop conditions and were chiefly coatmakers. By 1900, however, an exodus was under way to the vicinity of 22nd and Kedzie Avenue and by 1925 the old sweatshop district had been wholly abandoned in favor of the newer and more healthful area. The present district, as the old, specializes in the manufacture of coats.¹⁷ The Russians lived close to the Czechs in the district bounded by 12th and 16th Streets near Halsted. They produced trousers and coats under atrocious sweatshop condi-

⁵Longenecker, *op. cit.*, pp. 7-8.

⁶Data from U. S. Steel Corporation.

⁷*United States Steel in the Chicago District*, Wednesday, April 26, 1939, p. 3.

⁸Dumond, *op. cit.*, p. 123.

⁹Robert James Myers, "The Economic Aspects of the Production of Men's Clothing (With Particular Reference to the Industry in Chicago, 1937)." Typewritten thesis (Ph.D.), University of Chicago, p. 22.

¹⁰*Ibid.*, pp. 23-24.

¹¹*Ibid.*, pp. 20-21.

¹²*Ibid.*, pp. 24 and 20.

¹³*Ibid.*, pp. 24-25.

¹⁴Decker, *op. cit.*, p. 120.

¹⁵Myers, *op. cit.*, pp. 50-51.

¹⁶*Ibid.*, p. 46.

¹⁷*Ibid.*, pp. 46-47.

tions. With the abolition of sweatshops the Russian district disappeared and has never reappeared.¹⁸ Lastly, the Poles were located in 1900 along Milwaukee Avenue between Ashland and Western Avenues. This district is still occupied by Poles and is one of the most important in the industry.¹⁹

Meat Packing. The meat packing industry enjoyed a position of unquestioned national predominance down to 1914, accounting for nearly one-fourth of the output of the United States. Chicago's closest competitors—Kansas City, New York, Indianapolis and St. Louis—together manufactured less than one-fifth of the total American production. But the early and middle years of the period (1897-1900 and 1903-1913) witnessed the development at South Saint Joseph, Missouri, and at Fort Worth, Texas, respectively, of notable secondary production centers. The exhaustion of free grazing grounds for the pasturing of Mexican as well as southern range cattle made necessary and the growth of mechanical refrigeration, coupled with the new practice of fattening cattle on cottonseed meal, made possible the establishment of southern packing houses.²⁰ In short, decentralization of the industry was under way. The growing threat to Chicago's primacy was briefly checked during the World War years but, with the passing of abnormal demands, Chicago's decline as the meat packing center of the nation set in.

Printing and Publishing. Printing and publishing, Chicago's fourth ranking industry, underwent a remarkable growth during this period. The number of employees rose from 15,415 in 1899 to 28,098 in 1921, while the value of the product soared from \$36,238,000 to \$237,526,033. The 556.5 per cent increase registered in this latter category far outstripped New York City's 364.5 per cent gain and Philadelphia's 349.1 per cent.²¹ The most significant aspect of the industry was the publication of newspapers, the other branches of activity being still quite unimportant. In this enterprise the trends well established during the preceding industrial period continued. Chief of these in the 1897-1918 period was in the direction of the establishment of fewer newspapers and the extinction of some and the consolidations of other already existent organs. During the early years of the period Hearst established the *Chicago American* (1900) and the *Chicago Examiner* (1902). The *Chicago Chronicle* and the *Inter-Ocean* expired in 1907 and 1914 respectively. The latter newspaper was taken over by the *Record Herald*. The *Chicago Examiner* was combined in 1918 with the *Record Herald* to form the *Chicago Herald-Examiner*.²²

Secondary Industries. In the next group of secondary but leading industries—electrical machinery, apparatus and supplies, baking, furniture, and women's clothing—the first named played an ever more important role during the closing years of the 1897-1918 period, the employees increasing from 5,508 to 13,889 in 1919.²³ This swift development is attributable to the increasing replacement of steam by electricity as the motive power in many industries, the development of electric lighting and the extension of the telephone net, the growth of the automobile industry, and the manifold demands during the World War for searchlight equipment, telephone sets, wireless equipment, etc.

The baking industry, despite a near doubling of employees—5,795 in 1904 and 9,413 in 1919—and a practical quadrupling of value of products (\$20,654,000 in 1904 compared with \$80,122,000 in 1919)²⁴ lost its fifth place position among Chicago industries and dropped to ninth place. This may be attributed to the much faster growth of other industries, especially after the slump of 1921.

In the furniture industry Chicago ranked just behind New York City as a manufacturing center. The enterprise still remained largely competitive and free from giant corporations in the Chicago area, aside from the consolidation in 1897 of three large rattan furniture manufacturers in Massachusetts with one at Chicago to make a \$6,000,000 company.²⁵

A newcomer among Chicago's industries, the manufacture of women's clothing, closely followed baking in importance, averaging annually during the 10-year period (1909-1919) 7,263 employees while baking had 7,843. The women's clothing industry developed as an offshoot of men's clothing manufacture. Entrepreneurs in the latter activity extended their operations to include the manufacture of women's cloaks. This undertaking marked the beginning of the industry. The enterprise expanded in the 80's to include the suit branch of the trade and in the middle 90's added dresses for the wholesale trade. Since 1895 the industry has made every article of women's and children's wear.²⁶

As to the position of the women's clothing industry in Chicago in comparison with that of other cities, it may be said that it ranked third in terms of percentage of wage earners and value of product, being surpassed by Philadelphia and the center holding first position, New York City.²⁷

Just as in the case of the men's clothing industry, so did women's clothing manufacture undergo decentralization in this period. In 1900, the industry was concentrated in the Loop and in the vicinity of Blue Island Avenue and Roosevelt Road.²⁸ During the course of the succeeding decade a second center developed on Milwaukee Avenue. This surpassed the Blue Island district both in number of establishments and workers. The reason for the development of the Milwaukee Avenue district as well as the older Blue Island center is that the manufacturers desired a cheap and convenient labor supply. Inhabited by immigrant groups and situated on diagonal streets proceeding directly from the northwest and southwest sections of the city respectively to the Loop, the two centers filled the wants of the factory owners.²⁹ By 1925, however, the advantages of location in the midst of a cheap labor supply had been counterbalanced by the disadvantages attributable to distance from railroad terminals, hotels, and jobbers' showrooms. This condition is indicated by the fact that decentralization had ceased; 60 per cent of the industry was concentrated along the western edge of the Loop in the Market Street district.³⁰

A third group of secondary industries ranking behind electrical machinery, apparatus and supplies, baking, and women's clothing, were the manufactures of chemicals, building supplies, carbide, and brewing. The chemical industry owed its development largely to its ancillary

¹⁸*Ibid.*, p. 47.

¹⁹*Ibid.*

²⁰Clark, *op. cit.*, II, 798-799.

²¹Chicago Association of Commerce, Twenty-first Anniversary 1904-1925, *Survey of Advertising, Publishing, Printing and Allied Lines* (Chicago, 1925), p. 7.

²²Fagan, *op. cit.*, pp. 30-31.

²³United States Census of Manufacturers.

²⁴*Survey of Foods, Chemicals and Drugs*, p. 7.

²⁵Clark, *op. cit.*, II, 780.

²⁶United States Census of Manufacturers; Mable Agnes Magee, *Trends of Location in the Women's Clothing Industry* (Chicago: The University of Chicago Press, 1930), p. 11.

²⁷Magee, *op. cit.*, p. 39 and Tables 3 and 4, p. 39.

²⁸*Ibid.*, pp. 74-78.

²⁹*Ibid.*, pp. 82-91.

³⁰*Ibid.*, p. 94.

relation to meat packing and to the effect of the World War. This was particularly true of the research chemical branch. Certain research chemicals such as adrenalin, thyroxin, and insulin are derived from animals and consequently Chicago, as the nation's meat packing center, became one of the principal manufacturers.³¹ Research chemistry was also helped greatly by the World War. The United States Army Medical Department, imperatively needing certain rare sugars for the differentiation of bacteria, and being unable to obtain them from their German source because of the British blockade, called upon Chicago research chemists for assistance.³² The heavy chemicals division likewise saw a tremendous development; an increase of 1,000 per cent was registered in the 20-year period from 1902 to 1925; at the end of the period Chicago ranked third nationally as a producing center.³³ This advance may be attributed to the conditions favorable for fuel, electricity, and a broadly diversified group of industries which require these chemicals for their development.³⁴ In the industry as a whole, the number of establishments increased approximately 125 per cent between 1924 and 1925 and the value of products increased 728 per cent.³⁵

Perhaps the most significant development in the building materials industry was the trend toward consolidation in two important subdivisions—brick making and cement making. The leading brick makers tributary to Chicago effected a consolidation known as the Illinois Brick Company in 1900³⁶ while Chicago and the other manufacturers of the nation, following the establishment of the Portland Cement Association in 1904, established a great research and testing laboratory at Chicago.³⁷

In respect to the manufacture of linseed oil which is the basis of paint making and represents another subdivision of the industry, Chicago declined in importance, largely because of the shifting of American flax culture to the northwestern states.³⁸

The trend toward monopoly which was so apparent in the iron and steel industry was likewise reflected in the manufacture of carbide. In 1898 the Union Carbide Company of Chicago obtained control of its three rivals—there were only four carbide manufacturing plants in the entire nation in 1898—and thereby gained a national monopoly. The new company had a total output of about 4,000,000 pounds per annum.³⁹

Similarly in the Chicago brewing industry a consolidation was effected in 1900. Thirteen leading breweries formed the United Breweries Company of Chicago.⁴⁰

Miscellaneous Industries. Ancillary to meat packing and the men's and women's clothing industries, was a group of lesser industries: soap manufacture, candle making, glue preparation, tanning, millinery, and the dyestuff industry. The first of these declined in terms of percentage of national production from 20.16 per cent to 11.87 per cent in 1923,⁴¹ probably because of the development of competing slaughter houses in other parts of the nation.

Candle manufacture, in so far as it was a by-product

of the meat packing industry, underwent a decline partly because of the destruction by fire of the principal plant producing candles made from animal fats and more particularly because of the substitution of a petroleum base for stearic acid, a derivative of animal fat. The revolution in the industry thereby effected still left Chicago as an important manufacturing center responsible for perhaps 25 per cent of the national output, but the succeeding decline in production, as the twentieth century advanced, was not confined to Chicago. The lessening importance of the industry is to be attributed to more efficient lighting system, especially in the mines.⁴²

Glue manufacture continued as an important lesser industry with perhaps 25 per cent of the national output.⁴³

In regard to tanning, Chicago held fourth place nationally and produced for the most part heavy leathers and calf-skin uppers.⁴⁴

The World War was largely responsible for the development of millinery during the latter part of this period and the immediately succeeding years (1917-1923). Railroad congestion and other difficulties occasioned by the war compelled many purchasers who had heretofore patronized millinery markets of other cities to do their buying in Chicago. The change, at first thought to be only temporary, proved permanent, for the buyers quickly recognized the superior goods, the better knowledge of the latest styles—Chicago designers regularly sent designers to Paris—and the ability of Chicago manufacturers to effect deliveries.⁴⁵

Other minor industries of Chicago during the 1897-1918 period were canning and the manufacture of corn oil. Canning developed in the Chicago district because of the widespread use of labor-saving machinery: automatic can-making and sealing machines, corn huskers, etc.⁴⁶

Chicago's location in the heart of the corn belt was responsible for the development of the corn oil industry. A new industry, it became a commercial product in the years just before World War, and in 1914 the output amounted to perhaps \$3,000,000 a year.⁴⁷

Conclusions. As for the progress and development of manufacturing between 1897 and 1918, it may be said to have been characterized by the development of the basic steel industry toward an ever increasing predominance and the rise of such new products as carbide, together with the greatly accelerated development of such old industries as chemicals and women's clothing, which offset the decline of older industries, notably meat packing. Manufacturing, as measured by the number of wage earners employed in the Chicago region as a whole, more than doubled in the 1890-1920 period. In terms of national standing, Chicago, in 1914, with its manufactures valued at \$1,483,498,416, ranked second only to New York City.⁴⁸ Industries were increasingly operated by electrical power in preference to steam power in the closing years of the period, and Chicago created the foundations for the position which she held after the World War—the center of a great power pool transmitting electrical energy to much of the Middle West.⁴⁹ Lastly, the trend toward consolidation of competing units in the several industries into trusts and combinations continued apace.

³¹*Survey of Foods, Chemicals and Drugs*, pp. 18-19.

³²*Ibid.*, p. 18.

³³*Ibid.*, p. 17.

³⁴*Ibid.*, p. 18.

³⁵*Ibid.*, p. 16.

³⁶Clark, *op. cit.*, II, 793.

³⁷*Ibid.*, p. 791.

³⁸*Survey of Foods, Chemicals and Drugs*, p. 23.

³⁹Clark, *op. cit.*, II, 823.

⁴⁰*Ibid.*, p. 812.

⁴¹*Survey of Foods, Chemicals and Drugs*, p. 20.

⁴²*Ibid.*, p. 22.

⁴³*Ibid.*, p. 19.

⁴⁴Clark, *op. cit.*, II, 762.

⁴⁵*Chicago—The Great Central Market*, p. 75.

⁴⁶*Survey of Foods, Chemicals and Drugs*, p. 14.

⁴⁷*Ibid.*, p. 23.

⁴⁸Bogart and Mathews, *op. cit.*, p. 102.

⁴⁹Hoyt, *op. cit.*, pp. 198-200.

Chapter VI

CONTRACTION, TRANSFORMATION AND NEW PROBLEMS, 1918-1940

The latest period of Chicago's industrial growth is characterized by three outstanding developments: a decline, the beginnings of which were noted in the preceding chapter, both in respect to local and national standing of Chicago's former industrial giants—meat packing, men's clothing, and furniture; a spectacular advance on the part of the printing and publishing industry; and the growth, largely because of the advance of science and technology, of several new industries. The interval between the two World Wars, from 1919 to 1939, in short, is a transitional period in which the industrial life of Chicago became more diversified. Since, however, the diversification added further production goods industries, an unbalance between production goods industries and consumption goods industries developed.

Iron and Steel Industry. Of the four top-flight industries—iron and steel, printing and publishing, meat packing, and men's clothing—the first named held its position of supremacy in the industrial scene. The factors which had made Chicago a leading steel manufacturing center in the past—namely, favorable location in respect to the necessary raw materials, unusual facilities for the distribution of finished products because of Chicago's unchallenged position as a railroad center, and the constantly increasing markets for steel in the Middle West¹—continued to operate and were augmented by new ones identified with and resulting from the nation's development. As the population center of the United States moved westward, iron ore which had formerly been sent to the Pittsburgh steel making area to meet the industrial demands of the more populous East was increasingly diverted to the Chicago district.² Furthermore, the several subsidiaries of the United States Steel Corporation in the Chicago area effected a thorough program of modernization from 1930 to 1939. This included the construction of a continuous plate mill at South Chicago, modernization of facilities for producing flat strip steel at the Gary works, the installation of an 80-inch continuous hot strip mill and modern cold reducing equipment at the Gary Sheet and Tin mills, construction of two new continuous rod mills at Joliet, and the installation at the Gary works of the improved Brunnerizing furnace.³ During the 1929-1939 period the Chicago area attained 20 per cent of the nation's ingot producing capacity. The dollar value of Chicago's steel works and rolling mills' output rose from 70 per cent to 79 per cent of Pittsburgh's and the total annual production of nearly 14,000,000 tons closely rivaled Pittsburgh's 15,000,000.⁴

Printing and Publishing. Printing and publishing, now Chicago's second industry, advanced from the fourth place position which it had held during the 1897-1918 period partly because of the natural increase of business in the Chicago area. As the mammoth mail-order houses

of Sears Roebuck and Montgomery Ward developed their business throughout the Middle West, the demand for catalogues grew. Furthermore, the railroads centered in Chicago made heavy demands on the printing industry for tariffs, tickets, circulars, time tables, etc. The numerous Chicago banks required checks, bonds, stocks, etc., for the conduct of their operations. Department stores needed sales slips, advertising matter, and inter-department forms. The myriad manufacturers of Chicago required booklets, catalogues, and office stationery in huge quantities. Lastly, the publication of textbooks for schools, books of a scientific nature, and fiction assisted the development of the industry.⁵

Perhaps an even more important factor was the decision of many publications, formerly established in the East, to come to Chicago. This action stemmed from the fact that the printing and mailing costs connected with the publication of periodicals for middle western readers are lower in Chicago, because of its central location, which permits favorable postal zoning arrangements and reduces the cost of transport of paper stock. Furthermore, the newer plants, presses, and other printing machinery, capable of turning out speedily a superior product, proved an attraction to eastern publishing houses. Lastly, Chicago's superior railroad facilities were a factor in attracting printing business from the east. None of New York City's big printing firms was located on a switch track. This situation added to the cost of printing operations the heavy expense of hauling both raw materials and paper and the finished products to and from the freight stations. All of Chicago's big printing plants, on the other hand, had their own switch tracks and some had water transportation, too.⁶

The newspaper and lithography industries well illustrate the growing ascendancy of printing and publishing. The trends noted in the last chapter in the newspaper field are accentuated in the post-war period with the demise of the *Chicago Evening Journal* on August 21, 1929, the *Chicago Evening Post* on October 31, 1932, and the *Chicago Herald-Examiner* in 1939. The *Post* was taken over by the *Chicago Daily News*. The *Herald-Examiner*, a morning newspaper, was consolidated with Hearst's other organ, the *Chicago Evening American*, on August 28, 1939 to form the *Herald-American*, an evening paper. Only two new metropolitan newspapers appeared during the period, the *Chicago Journal of Commerce* (1920), which is patterned on the model of and serves the same purpose as the *Wall Street Journal*; and the *Chicago Times*, a tabloid newspaper started in 1929. Although it is true that the period is one of continuous contraction and consolidation in number of newspapers, yet it is also one of growing importance, for these papers have a combined circulation of approximately 4,500,000 copies.⁷ One reason for this enormous coverage is the growing population of Chicago proper and the rapidly developing trade area, which have furnished an ever increasing market for a very large circulation of newspapers. Also the multiplying wholesale

¹United States Steel in the Chicago District, Wednesday, April 26, 1939, p. 2; Longenecker, *op. cit.*, p. 6; Eugene J. Buffington, "Steel Production in and near Chicago on a Titanic Scale," *Chicago—The World's Youngest Great City*, p. 130.

²Karlin, *op. cit.*, pp. 69-70; Chicago Association of Commerce, *Survey of the Metals Trade and Allied Industries* (Chicago, 1925), p. 3.

³United States Steel in the Chicago District, Wednesday, April 26, 1939, p. 3.

⁴*Ibid.*, pp. 1-2; Chicago Association of Commerce, *An Analysis of the Chicago Industrial Area With Respect to National Defense Production and New Plant Establishment* (Chicago, 1940), p. 11. (Henceforth this work will be cited as *An Analysis of the Chicago Industrial Area*.)

⁵William V. Kelley, "Printing Industry," *Chicago — The World's Youngest Great City*, p. 143; *Survey of Advertising, Publishing, Printing and Allied Lines*, pp. 4 and 6.

⁶*Chicago—The Great Central Market*, pp. 80-81.

⁷Fagan, *op. cit.*, p. 31.

and retail stores serving Chicago and its vast hinterland have required enlarged facilities for advertising.⁸

Lithography developed in Chicago primarily because the character of the activity requires that it be located in centers of industry. Chicago, situated within 500 miles of two-thirds of the national advertisers, including the automobile manufacturers of Detroit, Toledo, Cleveland, and Wisconsin, the meat packers of Omaha and Kansas City, the cereal manufacturers of the Twin Cities, and the miscellaneous industries of Milwaukee and Kansas City, naturally came to be the lithography capital of the Middle West. Furthermore, Chicago, as a great center of skilled workmen and artists, furnished the combination of trained labor and artistic skill required for the development of the lithography industry here.⁹

Book and job printing, on the other hand, lagged in the general trend toward consolidation and concentration which characterized the printing and publishing business in Chicago. It was conducted on a small-scale basis—in 1923 there were 1,467 publishing houses with a total product valued at about \$245,960,000—and reflected the general situation in the United States under which, as late as 1925, over 25 per cent of all book and job plants in the country did an annual business of less than \$5,000 each, and 61 per cent a volume of less than \$20,000 each. Excess equipment, with a consequent sharpening of competition and price cutting, characterized the industry.¹⁰

Meat Packing. The decentralization of the meat packing industry, the beginnings of which were noted in the last chapter, continued apace in the 1919-1940 period. As a result, Chicago lost her national primacy. Her peak-year slaughter of cattle in 1916, amounting to 24.3 per cent of the national total, declined to 13.6 per cent in 1939, with an overall average of 19.5 per cent for the 1916-1939 period. Similar declines were registered in the slaughter of calves and hogs and an even greater drop in sheep killing.¹¹ In 1937 the industry comprised 10.2 per cent of the total industrial output of the Chicago region, 17.1 per cent of the national meat packing production, and the value of the product was \$479,062,550.¹²

Men's Clothing. A similar decline, beginning shortly after 1914, occurred in the men's clothing industry. The output, which in 1923 was in excess of \$250,000,000 in retail value and was exceeded only by that of New York City, fell to only \$110,000,000 in 1929 and by then was 44 per cent below that of 1919 and 26 per cent below that of 1914. Further decline ensued in the 1929-1936 period. Furthermore, such a consolidation of the industry occurred that by 1936 a great proportion of the total production was carried on by three large ready-made firms and eight or ten special order firms.¹³

The diminution is to be attributed to the lessening importance of the factors which had been largely responsible for the growth of the men's clothing industry. As factory-made clothing increased in popularity, the market had expanded from its former southern and western concentration, and had come to a more even national distribution with respect to population, a change which gave a relative advantage to the more populous

east. Moreover, a decentralization of the industry developed, just as in the case of meat packing, and rival manufacturing centers sprang up in Cincinnati, New Orleans, Kansas City, Los Angeles, and many smaller cities better situated than Chicago for serving their local territories. Lastly, the shift in American clothing buying habits from more expensive and better clothing to inexpensive and cheap clothing injured Chicago, for the industry here emphasized quality. As the shift continued, Chicago's reputation as a quality clothing center lost much of its value as an asset to the industry. Furthermore, Chicago clothing manufacturers accelerated the process by emphasizing price instead of quality.¹⁴ Lastly, the increasing unionization of the Chicago labor supply since 1914 caused several anti-union entrepreneurs to move out of the city into unorganized markets and prevented several like-minded manufacturers from establishing themselves in Chicago.¹⁵

The second group of Chicago industries, in order of importance, numbered electrical machinery, apparatus and supplies, baking, furniture, women's clothing, and non-ferrous metals and their products.¹⁶

Electrical Machinery, Apparatus and Supplies. The factors which had brought the electrical industry to fifth place in Chicago during the pre-World War and World War years—namely, the increasing use of electrical power for the operation of machines, the development of electric lighting, telephones, and automobiles—continued to operate in this period. Furthermore, the Commonwealth Edison Company of Chicago, in an endeavor to increase the use of its current, renewed gratis its 60-watt lamps¹⁷ and promoted the use of electric apparatus for the home—such as vacuum cleaners, electric toasters, coffee pots, curlers, grills, etc.—by selling them at low prices and giving them away in return for coupons distributed monthly to its customers. Lastly, the perfecting of the radio during the past 15 years has greatly developed the industry.

Baking. In respect to the baking industry, perhaps the most striking development has been the phenomenal increase in factory-type baking, especially in the case of bread. This growth was brought about, at least in part, by the great expansion after the World War of the chain store grocery which almost always operated bakeries of its own. Again, private baking companies operating in buildings built for the purpose and using the latest types of machinery and factory methods served the chain stores, delicatessens, and groceries. These factory-type bakeries, together with the old style bakery employing only a few hands, virtually ended home bread baking and lessened considerably the home manufacture of other bakery products. Commercial baking has made marked advances in productive efficiency, as is attested by the fact that the increase in the average number of wage earners, wages, and number of establishments has not kept pace with the increase in the value of product, which in a representative four-year period (1923-1927) grew from \$85,000,000 to over \$101,000,000.¹⁸ The industry employed 13,282 persons in 1939, or 3 per cent of the total number of workers in the city.¹⁹

As to the question of the location of bakeries in Chicago in this period, it may be said that bakeries tend

⁸*Ibid.*, p. 11.

⁹*Chicago—The Great Central Market*, p. 72.

¹⁰Fagan, *op. cit.*, p. 39.

¹¹*Chicago Board of Trade Reports*; United States Department of Agriculture, *Agricultural Market Service*.

¹²*United States Census of Manufactures, 1937. An Analysis of the Chicago Industrial Area*, p. 9.

¹³Myers, *op. cit.*, p. 25; *Chicago—The Great Central Market*, p. 44.

¹⁴Myers, *op. cit.*, pp. 29-30.

¹⁵*Ibid.*, p. 30.

¹⁶*United States Census of Manufactures*.

¹⁷Chicago Association of Commerce, *Twenty-first Anniversary 1904-1925. Survey on Public Service*, (Chicago, 1925), p. 8.

¹⁸Stone, *op. cit.*, pp. 15-16.

¹⁹*United States Census of Manufactures*.

to be concentrated in areas with large populations. Recent studies have revealed that the larger the percentage of foreign born persons in a given district, the larger is the number of bakeries. Wholesale bakeries are generally located near tributary buying areas and rely on truck service rather than railroads for supplies. Finally, wholesale bakeries are located chiefly on commercial frontage in residential areas, but a few of the larger establishments are situated in the strictly industrial localities.²⁰

Furniture manufacture, Chicago's seventh most important industry, held its strong position partly because of its ample supply of skilled workers, who were drawn not only from Chicago proper but from hundreds of miles around. The unrivalled transportation facilities possessed by Chicago made it the most important labor exchange in the country.²¹ Again, factory sites in Chicago for the manufacture of furniture are readily available in spots where the transportation facilities of the city can be easily utilized, and where land values are low in relation to the advantages offered. Accordingly, during the past 15 years, manufacturers have generally located their plants in outlying areas served by belt lines.²² Lastly, the construction of the huge Furniture Mart with its numerous attractive displays of furniture has greatly facilitated sales.

Significant developments have marked the women's clothing industry during the past decade. By 1930 Chicago had ceased to be a coat manufacturing center of importance. It had, however, forged ahead greatly in the dress making field,²³ largely because the competition with New York jobbers forced many Chicago cloak and suit firms to take up dress manufacturing or coat jobbing or to give up the clothing industry entirely.²⁴ As a result of this development the percentage of women employees increased, and for this reason the wages received by the workers in the industry averaged less than in Cleveland and New York.²⁵ New York continued to be the fabricator of more than 80 per cent of the total national output and to be the employer of six to ten times the number of workers employed in Chicago.²⁶

In regard to the location of the industry, not only had decentralization ceased by 1925, as was indicated in the last chapter, but a positive return of the industry to the Loop had ensued. This reversal covered every division of the industry, except the underwear branch, and resulted from the competition of Chicago and New York jobbers for stockroom and showroom space. Since women's clothing styles change frequently, such space was essential for effective display of new models. Conversely, the stability of underwear styles has rendered unnecessary the removal of the underwear factories from the outlying areas of Chicago to a more central location.²⁷

In contrast to the organization of the industry in New York City and other women's clothing centers, where manufacture was carried on in a submanufacturing system, Chicago's industry was and is conducted

on a factory production basis.²⁸

Partially ancillary to the great telephone industry is the eleventh ranking Chicago enterprise—the manufacture of non-ferrous metals—copper, lead, and brass. For example, in 1925 the Hawthorne plant of the Western Electric Company required 30,000,000,000 feet of copper wire and 145,000,000 pounds of lead—about one-eighth of the total lead output of the country. The manufacture of automobile accessories, soda fountains, store fronts, nuts and screws, plumbing equipment, forgings, dress fasteners, dairy apparatus, valves, washing machines, railroad supplies, etc. also consumed enormous amounts of these metals.²⁹

Secondary Industries. Second rank industries in this period are, in order of importance, paper and allied products, leather and leather products, chemicals and allied products, transportation equipment, automobiles and automobile accessories, and building materials.³⁰

Paper manufacture in Chicago has for its *raison d'être* the enormous demand on the part of scores of Chicago industries for paper products of all kinds—stationery, containers, advertising materials, etc. Furthermore, Chicago's excellent water connections and unsurpassed railway links with the great Middle West hinterland have rendered her not only the supplier of raw materials for paper factories throughout the area, but also the distributor of finished products for the industrial enterprises of the region.³¹

The manufacture of leather and leather products, more particularly shoes and boots, owes its importance in this, as in former industrial periods, partly to the presence of the meat packing industry. The numerous large tanneries located in and near Chicago attracted shoe manufacturers desirous of having ample supplies close at hand. Furthermore, the fact that more points can be reached by a direct shipment from Chicago than from any other city in the nation because of its unequalled railroad connections led buyers as well as manufacturers to make Chicago a center for the industry. Again, Chicago manufacturers have expanded their market greatly by effecting arrangements with the railroads whereby small shipments—less than carload lots—have been handled expeditiously to meet the requirements of small selling units. Finally, Chicago became a style and buying center for the industry, because the retailers who supply the shoe needs of the 50,000,000 population residing within one night's ride of Chicago find this city the easiest point to reach for their buying trips and conventions. The numerous shoe stores in Chicago's Loop also make the city a center for shoe styles by their large display windows which are studied carefully by visiting retailers.³²

The chemical and allied products industry entered the 1918-1940 period with a bright future. It was already fairly well developed in 1914, and it had been enormously stimulated during the period of the World War because of the needs of the Federal Government. This was soon improved because of the active interest of the University of Chicago and Northwestern University in chemical research. Dr. Julius Steiglitz of the former institution encouraged and assisted manufacturers in the production of laboratory chemicals, while the latter school created a laboratory for the manufacture of the more rare chemicals.³³ Furthermore, approxi-

²⁰Stone, *op. cit.*, pp. 32-33, 33-34, 34-36, and 36-37.

²¹Chicago—*The Great Central Market*, p. 66; V. L. Alward, "Chicago's Importance in the Country's Furniture Trade," *Chicago—The World's Youngest Great City*, p. 132; Chicago Association of Commerce, Twenty-first Anniversary 1904-1925, *Survey of the Furniture Trade* (Chicago, 1925), p. 4.

²²Chicago—*The Great Central Market*, p. 66.

²³Magee, *op. cit.*, pp. 54-55.

²⁴*Ibid.*, p. 108.

²⁵*Ibid.*, p. 46, n. 6.

²⁶*Ibid.*, pp. 38-40, Tables III and IV, p. 39, Table XIV, p. 137, Table XXXV, p. 164 and Table XXXVIII, p. 167.

²⁷*Ibid.*, pp. 105-107 and Table 9, p. 103.

²⁸*Ibid.*, p. 66.

²⁹*Survey of the Metal Trades and Allied Industries*, pp. 12 and 14.

³⁰*United States Census of Manufactures*.

³¹Chicago—*The Great Central Market*, p. 77.

³²*Ibid.*, pp. 84-85.

³³*Survey of Foods, Chemicals and Drugs*, p. 18.

mately half a dozen firms in the Chicago area manufacture laboratory and research chemicals.³⁴

Soap manufacture in the Chicago area, an enterprise allied to the larger chemical industry, is a thriving activity ranking third nationally in 1925.³⁵ The original reason for soap manufacture here—namely, the abundant raw materials created by the operations of the meat packing industry—was fortified by the demands of the ever expanding population of Chicago and its populous hinterland. Again, Chicago's unrivalled ability, because of its vast railway network, to fill the requirements of this hinterland aided the growth of this industry.

The manufacture of transportation equipment—railway supplies—is an industry ancillary to and resultant from Chicago's position as the principal railroad center of the country. The city produces more railroad passenger cars and Pullman coaches than any other city, and is a leader in the manufacture of freight cars and railroad appliances.³⁶

The fabrication of building materials, the last of Chicago's second rank industries, maintained its position in this period partly because many of the raw materials underlay Chicago or were close at hand. Then, too, the great building boom of the early 20's assisted the industry. With the speeding up of transportation and communications resulting from the development of the automobile and concrete highways, on the one hand, and swift suburban and interurban services by the principal railroads on the other, the great prairies around Chicago were subdivided and new communities sprang into being. These new suburbs made heavy demands on the local building material industry, especially the plumbing and bathroom fixtures divisions.³⁷

Minor Industries. Among Chicago's minor industries are the manufacture of animal glue, baking powder, mixed feeds, and toys.

The first of these enterprises declined in this period because of German competition after the World War, together with that afforded by cheaper grades of glue made from vegetables.³⁸

The change in demand from the cream of tartar type of baking powder to that manufactured from a phosphate base caused Chicago's rise as a center for this commodity.³⁹

The manufacture of mixed feeds in Chicago developed because of the city's role as the main distributing point for the farms of the middle West. In 1925 the city produced 15 per cent of the national annual output and held fourth position in the nation. Chicago's production rose 300 per cent in the 1905-1925 period. In order of importance, the several feeds were dairy, poultry, and miscellaneous feeds.⁴⁰

Relieved of German competition during the first World War because of Great Britain's blockade of Germany, Chicago as well as other American toy manufacturers were able to place their plants on a profitable production basis. The application of the latest improved automatic machinery, scientific standardization of the industry, and the creation, for some branches of the industry, of service stations supplying parts and accessories for damaged toys, enabled Chicago manufacturers during the post-war period to meet on equal terms the

cheaper seasonal German toys which are largely of home manufacture.⁴¹

The progress and development of Chicago industry during the 1919 to 1939 period may be summarized in these salient features: the culmination in 1929 of the trend toward mergers of corporations; an even more pronounced development of the basic steel industry; the further supplementing of steam power by electrical power, for Chicago now became the center of the great Middle Western power pool; and a great development of consumers' goods industries to meet the needs of the growing population.⁴² Perhaps the most striking aspect of the Chicago industrial picture is its diversified character. In all, 250 different types of products are manufactured in the city, and over 350 in the larger industrial areas. Furthermore, Chicago's manufacturers in 1937 were produced by almost 8,000 industrial establishments and over 400,000 wage earners, whose annual income totalled over \$500,000,000. During the same year Chicago was responsible for 6.3 per cent of the nation's industrial output and her workers received 10.3 per cent of the total industrial wages earned throughout the country.⁴³

Despite a numerical increase in industrial workers by more than 250,000 between 1890 and 1930, industry showed the lowest rate of increase of all occupational groups. Industrial workers declined from 50.2 per cent of the total number of workers in 1890 to 42.6 per cent in 1910 and to 36.1 per cent in 1930. This phenomenon, which also appeared throughout the nation, was the result of the increasing mechanization of industry (both in Chicago and nationally) which tended to reduce the need for man power, the tendency for industry to decentralize, and the increase in the number of persons engaged in transportation, trade, public service, professional services, and clerical work.⁴⁴

Perhaps the most portentous industrial development in this period was the decentralization trend. The principal causes were as follows: (1) a rise in values (and also in rent and taxes) in the central business district, which resulted from the increasing competition for the use of land in that area and the areas immediately south, west, and north of it; (2) an increase in required plant size, which created a demand for space which neither land costs nor available land near Chicago's center could supply; (3) a desire for room for further expansion near belt lines and in districts legally zoned for manufacture; (4) a wish for relief from congestion, which hampered truck operations and added considerably to costs; and (5) economies to be effected in establishing factories close to certain plants because of product and by-product relations and dependence on a common labor market.⁴⁵

The phenomenon of decentralization at first meant only a drift away from the original Loop manufacturing district and the area adjacent to it, and the formation of a new industrial locality within the city proper. Such a development began in 1902 with the creation of the Central Manufacturing District, then bounded by 35th, 39th, Ashland, and Morgan Streets. A rapid develop-

³⁴Chicago Association of Commerce, Twenty-first Anniversary 1904-1925. *Survey of Manufacturing and Wholesale Distribution*, pp. 12-13.

³⁵Hoyt, *op. cit.*, pp. 198-200.

³⁶Karlin, *op. cit.*, pp. 73-74; *United States Census of Manufactures*.

³⁷Johnson, *op. cit.*, pp. 380-381; *Recent Social Trends* (New York: McGraw-Hill Book Co., 1933), I, 284; Robert J. McFall, "Urban Decentralization," in *Economic Essays in Honor of Wesley Clair Mitchell* (New York: Columbia University Press, 1935), p. 305.

³⁸Johnson, *op. cit.*, pp. 349-350; McFall, *op. cit.*, p. 305.

³⁴*Ibid.*

³⁵*Ibid.*, p. 20.

³⁶Chicago—The Great Central Market, p. 44.

³⁷Hoyt, *op. cit.*, p. 199.

³⁸Survey of Foods, Chemicals and Drugs, p. 20.

³⁹*Ibid.*, p. 23.

⁴⁰*Ibid.*, p. 21.

ment ensued, and within four years 25 manufacturing plants were located there.⁴⁶ With the steady influx of new establishments, the value of the district rose from \$900,000, which was the purchase price in 1900, to \$15,000,000 in 1915.⁴⁷ Even more spectacular growth was registered during the post-war period. The development of the district may be attributed to the advantages of cheaper land, which in turn permitted one-story buildings with continuity of plant operation; lower taxes;⁴⁸ direct freight-car service into the plants because of the adjacent Chicago Junction Railroad;⁴⁹ centralized location;⁵⁰ a better lot layout for industrial purposes; and closer contacts with related and complementary manufacturers.⁵¹ Furthermore, the directors of the Central Manufacturing District have encouraged its development by financing industrial concerns up to 80 per cent of the cost of land and buildings. Since many ordinary commercial banks are not equipped to analyze industrial processes or to make adequate loans, this service has materially assisted the growth of the District. Lastly, the directors have followed a consistent policy of assisting industries through depression periods. Uniformly good results have attended this practice; only one per cent of the industries in the District have failed.⁵²

Of the other new intracity industrial districts appearing since 1920, fully one-half lie within the central zone, bounded on the north by Madison Street and on the south by 55th Street. The remainder are distributed fairly equally in the northwest and southeast parts of the city. Industries are more concentrated in the southern portion of Chicago than in the northern area where a high degree of scattering obtains, modified by a pronounced tendency to locate factories adjacent to important transportation arteries leading from the city to the northwest.⁵³

As for the Loop, the Stock Yards, and the drainage canal district, which were the original manufacturing centers, there has been only a slight decentralization. This has included an extension westward of the light manufacturing area lying immediately west of the Loop, an industrialization of the districts to the west of the stock yards and including the Central Manufacturing District, and an even greater development of the already highly industrialized areas bordering the drainage canal and the railway lines to the southwest.⁵⁴

Paralleling chronologically the meaning of decentralization illustrated by the Central Manufacturing District, is another meaning—that of removal of an industry from Chicago proper to an adjacent or nearby town. This phase of the phenomenon of decentralization began in 1903 with the removal of the Western Electric Company from Clinton and Congress Streets to Cicero. Shortly thereafter (1906) the Corn Products Company bought 140 acres for their new plant at Summit. The Clearing railroad yards were built soon after 1900 and factories were later constructed near them. Lastly, a great manufacturing development occurred in the Calu-

met and South Chicago regions adjacent to Chicago's southern boundary in the 1906-1916 period.⁵⁵ The reasons for the development of these new districts are the same as those which led to the rise of the Central Manufacturing District.⁵⁶ In the case of the last named of these areas, additional factors operated to develop industry. A steel center of first importance in 1900, it rapidly advanced toward preeminence in that activity following the foundation of Gary in 1906. During the 1920-1933 period industries moving out of Chicago have for the most part settled in Clearing. Fully 75 per cent of the industries which have established themselves there have come from corporate Chicago.⁵⁷ Ninety-seven new plants and one replacement were built in Clearing between 1928 and 1940.⁵⁸

Other localities to which Chicago industries have gone are Barrington, Oak Park, East Chicago, Crystal Lake, Libertyville, Streator, Addison, Cicero, Waukegan, Summit, River Forest, Evanston, Kankakee, North Chicago, Des Plaines, Ottawa, Lyons, and Melrose Park.⁵⁹ It will be noted that almost all of these are located in Cook County and the northern half of Lake County, Indiana. In the 1920-1933 period, only 33 new industries were set up in this area as compared with 109 relocated from corporate Chicago.⁶⁰ These towns, adjacent to or near Chicago, have the optimum combination of rural and urban locational advantages.⁶¹ Only 18 Chicago industries settled in the outer limits of the Chicago region i.e., McHenry, Lake, Kane, DuPage and Will Counties in Illinois and Porter County and the southern half of Lake County in Indiana.⁶² Whereas in 1920, 76.2 per cent of the manufacturing of the Chicago region was conducted in corporate Chicago, and 12.9 per cent in important adjacent suburbs such as Evanston, Oak Park, Cicero, East Chicago, Hammond, and Gary, the percentage for the respective areas had changed to 71 per cent and 18.6 per cent by 1930.⁶³ Furthermore, some if not all of these suburbs did not rely wholly on their natural advantages to attract industries, but made efforts during the 20's to attract them by means of bounties and concessions. These usually took the form of free factory sites, but often comprised offers such as free buildings, tax exemptions or lowered tax rates for a number of years, special water rates, and even cash bonuses and payment of removal expenses from former locations.⁶⁴ These practices were largely abandoned during the succeeding decade.

Since Clearing is the best example of the migration of Chicago industries to an outside organized district, a more detailed treatment is in order. Bounded by 77th Street, 65th Street, Cicero Avenue, and Harlem Avenue, the District comprises nearly 3,000 acres. Its board of directors furnishes industries with full information concerning building designs, estimates of cost of erection of plants, and future expansion possibilities. Sites fully improved with water, sewer and gas mains, street paving, electric power lines, and railroad tracks installed and ready to use are then prepared. The Clearing District organization ordinarily finances only 75 per cent of a firm's new investment for land and buildings, but on

⁴⁶Hoyt, *op. cit.*, p. 213.

⁴⁷*Ibid.*, p. 230.

⁴⁸*Ibid.*, pp. 246 and 248.

⁴⁹*Ibid.*, p. 248; *Speaking of Ourselves: Reports of Rival Packing Company, Oppenheimer Casing Company, Loose-Wiles Biscuit Company, Caspers Tin Plate Company, and Bridgeport Brass Company and Aridor Company; Conversation with Mr. Stern, Sales Engineer of the Central Manufacturing District.*

⁵⁰*Speaking of Ourselves: Reports of Caspers Tin Plate Company, Oppenheimer Casing Company, Bridgeport Brass Company, and Dearborn Chemical Company.*

⁵¹Hoyt, *op. cit.*, p. 248.

⁵²Conversation with Mr. Stern, Sales Engineer of the Central Manufacturing District.

⁵³William N. Mitchell, *Trends in Industrial Location in the Chicago Region Since 1920* (Chicago, 1933) pp. 63-64.

⁵⁴*Ibid.*, p. 64.

⁵⁵Hoyt, *op. cit.*, pp. 213-214.

⁵⁶*Ibid.*, pp. 246 and 248.

⁵⁷Mitchell, *op. cit.*, p. 62; Brochure issued by Clearing Industrial District Organization.

⁵⁸Brochure issued by Clearing Industrial District Organization.

⁵⁹Conversation with Mr. George Mitten of the Public Service Company of Northern Illinois; Mitchell, *op. cit.*, p. 53.

⁶⁰Mitchell, *op. cit.*, Table XIII, p. 62.

⁶¹*Ibid.*, pp. 50-51.

⁶²*Ibid.*, Table XIII, p. 62, and pp. 62-63.

⁶³*Ibid.*, Table X, p. 53, Table XI, p. 57 and Table VIII, p. 49.

⁶⁴*Summary of Economic Real Estate and Mortgage Finance Survey—Federal Home Loan Bank Board.*

occasion finances up to 90 per cent.⁶⁵

Among the advantages possessed by Clearing are relatively low taxes and absence of building code requirements. Furthermore, there are no restrictions of a smoke abatement character. It is reported that an industrialist can construct his plant in about four weeks' less time than in Chicago.⁶⁶ An administration building located at the entrance of the District houses a complete construction, engineering, and administration staff. Hospital, postal, telegraph, restaurant, and club room facilities are available in this building. The 122 industries now located in Clearing employ over 21,000 persons. An ample labor supply is always available in nearby residential areas, and in the adjacent city of Chicago. The Chicago Belt Railway Company serves all industries in the District by private switch-tracks. The nearby Chicago municipal airport and the Goodrich Transit and Westport Lines handle air and lake shipments respectively. In addition, the American Railway Express Company and the Landon Cartage Company provide local deliveries.⁶⁷

An adverse factor at Clearing—and possibly in other peripheral industrial areas—is the higher cost of telephone service.

The small group of Chicago industries that have emigrated downstate in recent years have received favors not accorded those moving to adjacent or nearby suburbs. Downstate communities, in an effort to deal adequately with their pressing unemployment problems, have offered considerable inducements to manufacturers.

⁶⁵Conversation with Mr. Phelps, a director of the Clearing Industrial District.

⁶⁶*Ibid.*

⁶⁷Brochure issued by the Clearing Industrial District Organization.

Second only to the problem of decentralization in this period was the unbalance of Chicago's industries. The manufacture of production goods overshadowed that of consumption goods. The result was an intensification of the local relief situation after 1929. The leading production goods industry in Chicago—iron and steel—suffered seriously during the depression, because of the virtual cessation of heavy construction throughout the country. Thousands of employees were made jobless. Furthermore, the fact that the overwhelming majority of iron and steel workers are men, and usually heads of families, increased the general hardships of Chicago's working population.

In conclusion, it must be emphasized that Chicago's industries are still the beneficiaries of the city's matchless communication system, rich hinterland, strategic geographical position, and intelligent, hard-working and abundant labor supply. The new problems of decentralization and unbalance, although serious, are not insoluble. The constant advances of science are swiftly changing the industrial scene, especially in the field of consumption goods and promise at least a partial solution of the problem of unbalance. For example, the new plastics industry and the related manufacture of lucite utilize raw materials which Chicago can obtain easily—cotton, chemicals, coal tar, air, and water. Decentralization, involving shifts of industry to areas outside the city and region, can best be met by forthright study and correction of shortcoming within Chicago proper; coupled with the development of additional integrated industrial districts in Chicago, equipped with facilities that suburban sites cannot readily offer.

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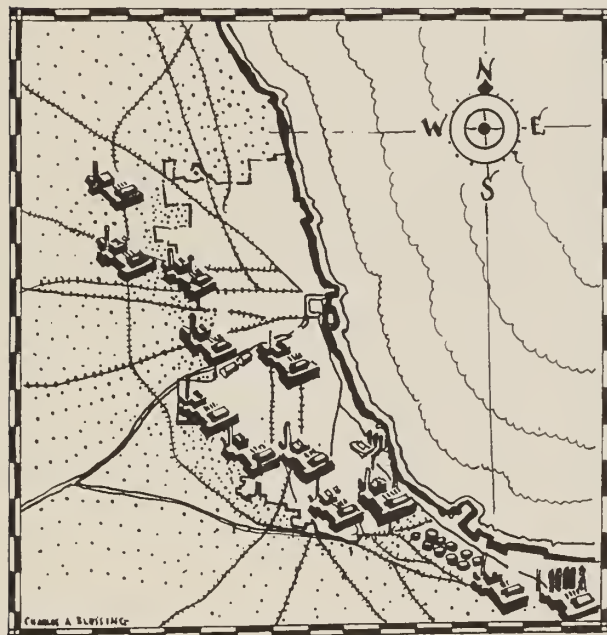
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PART II

INDUSTRIAL TRENDS IN CHICAGO AND ITS REGION



Chapter I

GENERAL CONSIDERATIONS*

Manufacturing is a fundamental source of employment, and one which varies widely in importance among different cities. In Gary, Indiana, for example, industrial enterprises constitute virtually the sole form of economic support of the city's inhabitants, whereas in Washington, D. C., manufacturing supplies only 10 per cent of the basic employment. These two cities, however, represent extremes in the relative importance of industry, for although some cities are primarily industrial and other primarily commercial, most are supported mainly by varying combinations of commerce,

trade, and industry. Table 1 indicates the approximate relative importance of basic sources of employment for some important cities.

Thus, such cities as Gary, Akron, Milwaukee, and Detroit are predominantly industrial communities. Moreover, not only are Gary and Akron highly industrialized but in addition they are "one-product" cities—steel and rubber, respectively—and their manufacturing enterprises are concentrated with respect to ownership into a relatively small number of large corporations. On the other hand, Minneapolis is largely a commercial and trading center, with manufacturing a relatively small factor in its economic support. Washington, D. C., is supported almost entirely by the activities of the Federal Government, whereas St. Petersburg is solely dependent on tourist trade for its support.

The three cities of Chicago, Boston, and Albany are similar in that each relies upon industry for about one-half of its economic support. However, Chicago differs from the other two cities—and from most other leading metropolises—with respect to the equilibrium which obtains between industry and trade. With its economic destiny dependent equally upon these two fundamental sources of employment for its citizens, the importance of a critical analysis of Chicago's industrial economy—a primary source of employment—is readily apparent. The succeeding portions of Part II of this report, are therefore devoted to a statistical presentation and analysis of some of the salient features of the manufacturing industries in the city and its industrial area.

*Although a great portion of the numerical data upon which this report is based comes from official governmental sources, many local organizations and their officers made important contributions to the study, particularly in respect to Chapter IV. Especially helpful in this connection were important data supplied by the Public Service Company of Northern Illinois and the Commonwealth Edison Company. Grateful acknowledgment is also made to the following organizations for furnishing indispensable data and useful suggestions: Western United Gas and Electric Company, Central Manufacturing District; Clearing Industrial District; and the Chicago Association of Commerce.

Table 1
RELATIVE IMPORTANCE OF BASIC SOURCES OF
EMPLOYMENT IN SELECTED CITIES†

City	Manu- facturing Industry	Trade Activi- ties	Ex- tractive Industry	Govern- ment or Resort
Gary, Ind.	100	0	0	0
Akron, Ohio.	80	20	0	0
Milwaukee, Wisc.	77	23	0	0
Detroit, Mich.	75	25	0	0
Buffalo, N. Y.	65	35	0	0
Pittsburgh, Pa.	60	40	0	0
Philadelphia, Pa.	55	45	0	0
CHICAGO.	50	50	0	0
Boston, Mass.	50	40	0	10
Albany, N. Y.	50	35	0	15
New York, N. Y.	40	60	0	0
Birmingham, Ala.	38	22	40	0
Minneapolis, Minn.	35	65	0	0
Denver, Colo.	25	46	0	29
New Orleans, La.	25	65	0	10
Washington, D. C.	10	10	0	80
St. Petersburg, Fla.	0	0	0	100

†Source: Adapted from Homer Hoyt, "Economic Background of Cities", *Journal of Land & Public Utility Economics* (May, 1941) p. 193.

Chapter II

THE CHICAGO INDUSTRIAL AREA

During the calendar year 1939, the latest year for which statistics are available, 184,230 American manufacturing enterprises produced goods valued at 56.8 billions of dollars. Nearly 60 per cent of these products were manufactured in 33 well integrated and relatively small regions termed "industrial areas," each of which is dominated by a populous central city. The Chicago industrial area is second in importance only to that of New York and greatly overshadows the remaining 31 such areas in the United States. As defined by the United States Census of Manufactures, the Chicago industrial area includes, in addition to Chicago proper, all of Cook County outside the city as well as the counties of DuPage, Kane, Lake and Will in Illinois, and Lake County in Indiana. This territory, embracing 3,617 square miles, contained 4,825,527 inhabitants in 1940, and provided employment for over 480,000 manufacturing wage earners, thus constituting a well defined

and closely integrated economic unit. The economic welfare of much of the area, particularly that in Illinois beyond the city limits, is dependent upon and dominated to a great extent by the urban markets of the central city, Chicago. Conversely, as demonstrated in *Population Facts for Planning Chicago*, the first monograph in this series, the central urban nucleus becomes more dependent every year upon commuters who, while choosing to live in outlying regions, find employment in the city itself. However, many suburbanites, especially factory workers, no longer commute into Chicago itself but travel to the rapidly developing outer manufacturing zone where they are employed.

As in the case of the city proper, the particular advantages of the industrial area obviously lie in the converging transportation arteries together with its strategic geographical location near sources of raw materials and markets for finished products. In this respect it should

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be noted that the Chicago Industrial Area is near the population center of the United States. Topography, among other factors, has determined to a large extent the intraregional distribution of industry. The low-lying shore at the south end of Lake Michigan, with numerous inlets suitable for terminals for lake shipping, has naturally attracted heavy industry, such as steel mills, which require the services of lake vessels in their operations.

The Chicago River and its tributaries, together with the interconnecting system of canals and waterways, the Des Plaines River, and the Fox River; the complex chains of belt railways; and the vital trunk lines leading to all parts of the country—all these provide the structural pattern to which industrial development has conformed. With the advent of motor transportation, the added network of highways has followed the already established pattern, thus integrating the area's industrial organization still further.

Functionally, the constituent parts of the Chicago industrial area are inseparable, and any planning concept or program—physical or economic—must necessarily recognize the fluidity which prevails within it. The city

of Chicago can no longer be regarded as an entity apart from its surrounding industrial hinterland. In the long run it is fallacious for any one of the sectors of the industrial area to attempt by strictly competitive methods to localize economic development within its own particular sphere of municipal influence; for when each of the various portions of the area is expanded in accordance with its unique comparative advantages, the entire area derives the maximum benefit. The economic aspect of planning, therefore, does not contemplate the exclusive development of any one segment of the Chicago industrial area; rather, it envisages a balanced economic structure throughout the entire area.

Thus the blueprints of the planners must present a layout in which a scientific integration of the city and its contiguous territory is a fundamental premise. Yet in order to provide a factual background for such an undertaking, it is relevant not only to examine each geographical component individually but to analyze the relationships between the industrial development of Chicago and the outlying portion of the industrial district as a prelude to ultimate integration of all portions of the area.

Table 2
DISTRIBUTION OF MANUFACTURING WAGE EARNERS
BY INDUSTRY GROUPS IN THE CHICAGO
INDUSTRIAL AREA, 1939*

Industry Group	Chicago Area		City of Chicago		Outside Chicago	
	Number of Wage Earners	Per Cent	Number of Wage Earners	Per Cent of Area	Number of Wage Earners	Per Cent of Area
TOTAL.....	483,593	100.0	347,839	71.8	135,754	28.2
Iron and steel and their products.....	109,518	100.0	50,849	46.4	58,669	53.6
Food and kindred products.....	65,086	100.0	57,075 ¹	87.7	8,011	12.3
Men's and women's clothing and furnishings.....	41,838	100.0	39,381	94.2	2,457	5.8
Machinery, except electrical.....	41,180	100.0	33,427	81.1	7,753	18.9
Printing, publishing and allied industries.....	41,046	100.0	37,767	92.2	3,279	7.8
Electrical machinery, appliances and supplies.....	36,540	100.0	23,685	64.8	12,855	35.2
Unclassified industries.....	27,958	100.0	24,458	87.5	3,500	12.5
Furniture and finished lumber products.....	21,559	100.0	17,457	80.9	4,102	19.1
Non-ferrous metals and their products.....	17,293	100.0	12,667	73.3	4,626	26.7
Chemicals and allied products.....	14,744	100.0	9,313	63.3	5,431	36.7
Paper and allied products.....	13,040	100.0	10,519	80.7	2,521	19.3
Petroleum refining and allied industries.....	12,116	100.0	1,155	9.5	10,961	90.5
Leather and leather products.....	10,504	100.0	9,890	94.2	614	5.8
Transportation equipment, except automobiles.....	9,320	100.0	5,200	55.8	4,120	44.2
Stone, clay and glass products.....	9,283	100.0	4,736	51.1	4,547	48.9
Textile-mill and fibre products.....	7,027	100.0	5,388	76.6	1,639	23.4
Automobiles and automobile equipment.....	5,541	100.0	4,872	87.9	669	12.1

*Source: U. S. Census of Manufactures.

¹Includes 19,281 wage earners employed in wholesale meat packing industries.

Shown in Table 2 is the number of industrial workers in the various industry groups with reference to the generalized location of their sources of employment. It is significant to note that in only two industry groups is the number of wage earners employed outside the city in excess of those engaged in similar industries within the corporate limits of Chicago. These two exceptions—iron and steel products, and petroleum refining—are explained, of course, by the enormous steel mills in Gary and East Chicago and by the large oil refineries in Whiting. Well established and constantly undergoing

plant expansion, the employment supremacy of these two groups outside the city is unlikely to be seriously challenged by Chicago proper in the near future. In two other industry categories—transportation equipment, and stone, clay, and glass products—a fair degree of employment balance exists between establishments located within and without the city proper. In all the remaining industry classifications, however, Chicago plants employ substantially more workers than do outlying manufacturing establishments.

INDUSTRIAL TRENDS IN CHICAGO AND ITS REGION

Table 3 presents the ratio of manufacturing wage earners in Chicago proper to the industrial area as a whole for a 20-year period. The area was accounting for an increasing proportion of national industrial employment up to 1929. Following an initial sharp decline after 1929, however, the area's relative position again began to improve so that by 1939 it had 6.1 per cent of total national industrial employment. Table 4 shows the relative importance of the Chicago industrial area as a constituent of national manufacturing employment.

Table 3

NUMBER AND PERCENTAGE DISTRIBUTION OF MANUFACTURING WAGE EARNERS IN CHICAGO AND THE CHICAGO INDUSTRIAL AREA, 1919-1939*

Year	Number of Wage Earners in		City as Per Cent of Area	Area's Per Cent of U. S. Total
	Chicago City	Chicago Industrial Area		
1919	403,942	520,133	77.7	5.9
1921	311,215	402,500	77.3	6.2
1923	384,769	513,000	75.0	6.3
1925	370,041	499,300	74.3	6.3
1927	372,061	501,146	74.3	6.4
1929	405,399	550,903	73.6	6.6
1931	282,518	382,852	73.8	6.2
1933	249,054	332,862	74.8	5.8
1935	317,505	429,517	73.9	6.0
1937	391,185	538,775	72.6	6.3
1939	347,839	483,593	71.9	6.1

*Source: U. S. Census of Manufactures.

Since the aggregate amount of purchasing power which flows to and from the gainfully employed persons in any given area is a function of the number of workers and their earnings, it is important to consider wage payments made to workers. In 1939 the average annual wages per worker for all manufacturing industries in the United States amounted to \$1,154. For Chicago, average annual wages in the same period were \$1,269, surpassing the national average by approximately 10 per cent. In contrast, for the industrial area outside Chicago, the 1939 wage averaged \$1,539, or 33.5 per cent in excess of the national figure. Such a disparity

in the individual industrial worker's earnings is obviously reflected in marked variations in the amount of purchasing power available for expenditure in the political area in which the worker resides. Chicago, of course, benefits to the extent that industrial workers employed outside Chicago reside in the city and expend their earnings within the central metropolis, or residing outside the city, expend at least a portion of their earnings in Chicago.

In addition to the 483,593 industrial wage earners employed in the area during 1939, there were 76,346 salaried employees on the payrolls of manufacturing concerns. Included in this group, whose average income amounted to \$2,700, are high-salaried executives as well as clerical and office workers. At present the salaried group constitutes 13.6 per cent of the total industrial personnel of the Chicago industrial area. The relative importance of this group has declined steadily since 1929 when it formed 17.2 per cent of the total. Moreover, in absolute terms, employment among the salaried personnel, which in 1939 was at 70.5 per cent of the 1929 level, has failed to register the recovery that has been attained by the wage earner group whose employment in 1939 was 91.8 per cent of the 1929 volume.

Numerous reasons account for the recent decline in relative and absolute importance of salaried employees. Of major consequence has been the tendency among manufacturers, particularly since the depression, to reduce overhead costs by eliminating many positions not directly related to the production process, and by introducing more efficient, labor-saving office equipment and methods, thereby displacing personnel. The expansion of many existing plants has likewise tended to widen the spread in the volume of employment between office and production workers. In such instances the plant expansion has involved a substantial enlargement of the productive labor force with only a nominal increase in the number of office workers.

Another factor which, to some degree at least, may have contributed to the relatively greater firmness in employment trends among the production workers is

Table 4

NUMBER OF MANUFACTURING WAGE EARNERS IN THE CHICAGO INDUSTRIAL AREA AND IN THE UNITED STATES FOR SELECTED YEARS, 1869-1939*

Year	Number of Wage Earners in Chicago Area	Per Cent Change from Previous Period	Per Cent of Total Wage Earners in U.S.	Index ¹	Number of Wage Earners in United States
1869.....	36,481	—	1.8	6.6	2,053,996
1879.....	88,841	143.5	3.3	16.1	2,732,595
1889.....	207,026	133.0	4.9	37.6	4,251,613
1899.....	251,400	21.4	5.3	45.6	4,712,763
1904.....	283,100	12.6	5.2	49.6	5,468,383
1909.....	358,400	26.6	5.4	65.1	6,615,046
1914.....	398,700	11.2	5.7	72.4	7,036,247
1919.....	520,133	30.5	5.7	94.4	9,099,372
1921.....	402,500	-22.6	5.8	73.1	6,946,570
1923.....	513,000	27.5	5.8	93.1	8,778,156
1925.....	499,300	-2.7	6.0	90.6	8,384,261
1927.....	501,146	0.4	6.0	91.0	8,349,755
1929.....	550,903	9.9	6.2	100.0	8,838,743
1931.....	382,852	-30.5	5.9	69.5	6,533,806
1933.....	332,862	-13.1	5.5	60.4	6,066,513
1935.....	429,517	29.0	5.8	78.0	7,393,762
1937.....	538,775	25.4	6.3	96.9	8,569,231
1939.....	483,593	-10.2	6.1	89.1	7,877,242

*Source: Data from 1869 through 1935 from Glenn E. McLaughlin, *Growth of American Manufacturing Areas* (Pittsburgh: Bureau of Research, 1938); data for 1937 and 1939 from U. S. Census of Manufactures. Hand, building, and neighborhood industries included in data from 1869 through 1889.

¹1929=100.

INDUSTRIAL AND COMMERCIAL BACKGROUND FOR PLANNING CHICAGO

the fact that collective bargaining is far more general and more effective among the wage-earner class than among factory office workers. Since it is an established principle with labor organizations to oppose employment reductions among their memberships, it may well be that such efforts have operated to stabilize employment somewhat among manufacturing wage earners generally.

Certain of the satellite industrial cities within the Chicago industrial area are completely dominated by, and dependent upon, the operations of a single large manufacturing establishment whose existence is governed by the policies of one ownership group. Gary, for example, is a dependency, economically speaking, of the United States Steel Corporation. Whiting is an example of similar dependency, relying to a great extent on the employment of the petroleum refineries for its economic support. Moreover, in addition to the residents in these particular and similarly situated cities, a large group of commuters from Chicago proper find employment in these satellite industrial localities.

A certain amount of economic hazard exists when the economic destiny of a locality hangs upon a single industry controlled by a unified ownership. In such cases, the supreme authority to expand, contract, or abandon plant operations is solely dependent on corporate policy and decisions which, perforce, must be made in the interests of the company rather than in the interests of the community which it is supporting. But, aside from the effects on employment which may result from the voluntary acts of the ownership group, other negative aspects are inherent in a "one-industry" locality. For example, serious unemployment resulted when a single unit of the vast Gary steel mills was obliged to close on account of technological obsolescence, only a few years

after its erection. Furthermore, any interruption in the flow of iron ore from the Lake Superior district would entail certain readjustments in the Calumet district steel mills to enable them to maintain their advantageous competitive position.

Yet, although there are numerous elements of potential economic and employment uncertainty in some of Chicago's more important tributary cities, the economy of the parent city in these particular respects is relatively free from many such aspects which feature the industrial development in its hinterland. Particularly is this true in respect to the employment dispersion among its manufactures. Chicago, in contrast to some of the "one industry" localities in the area, possesses no single industry under one ownership of sufficient employment importance to affect drastically the total volume of industrial employment in the event of curtailment or complete cessation of that plant's operations. For example, the largest employer of manufacturing wage earners in Chicago had in 1939 some 16,000 workers on its payroll, or only 4.6 per cent of the total number of industrial workers in the city. In 1939 only five manufacturing concerns in Chicago were employing over 10,000 workers, although this number is probably slightly larger at present in view of improved business conditions. Conversely, some 30,000 workers were employed during 1939 in the various units of the United States Steel Corporation in the Indiana-Calumet area, representing 22 per cent of the total industrial employment in the area outside the city.

Important differences exist respecting the relative importance of the type of products manufactured by the central city alone and by the area as a whole. As shown by Table 5, 51.6 per cent of the area's industrial wage earners are employed by the "heavy" or producers' goods

Table 5

DISTRIBUTION BY INDUSTRY GROUPS OF MANUFACTURING WAGE EARNERS IN THE CHICAGO INDUSTRIAL AREA ENGAGED IN THE MANUFACTURE OF PRODUCERS' AND CONSUMERS' GOODS, 1939*

Industry Group	Chicago Area		City of Chicago	
	Number of Wage Earners	Per Cent of Total	Number of Wage Earners	Per Cent of Total
GRAND TOTAL.....	483,593	100.0	347,839	100.0
PRODUCERS' GOODS—				
Total.....	250,621	51.6	147,049	42.3
Iron and steel and their products.....	109,518	22.5	50,849	14.6
Machinery, except electrical.....	41,180	8.5	33,427	9.6
Electrical machinery, appliances and supplies.....	36,540	7.6	23,685	6.8
Non-ferrous metals and their products.....	17,293	3.6	12,667	3.7
Chemicals and allied products.....	14,744	3.0	9,313	2.7
Transportation equipment, except automobiles.....	9,320	1.9	5,200	1.5
Stone, clay and glass products.....	9,283	1.9	4,736	1.3
Paper and allied products.....	7,822	1.6	6,287	1.8
Unclassified industries.....	4,921	1.0	885	0.3
CONSUMERS' GOODS—				
Total.....	232,972	48.4	200,790	57.7
Food and kindred products.....	65,086	13.5	57,075	16.4
Men's and women's clothing and furnishings.....	41,838	8.7	39,381	11.3
Printing, publishing and allied industries.....	41,046	8.5	37,767	10.8
Unclassified industries.....	23,037	4.8	23,573	6.8
Furniture and finished lumber products.....	21,559	4.5	17,457	5.0
Paper and allied products.....	5,218	1.1	4,232	1.2
Petroleum refining and allied industries.....	12,116	2.5	1,155	0.3
Leather and leather products.....	10,504	2.2	9,890	2.9
Textile-mill and fibre products.....	7,027	1.5	5,388	1.6
Automobiles and automobile equipment.....	5,541	1.1	4,872	1.4

*Source: U. S. Census of Manufactures.

INDUSTRIAL TRENDS IN CHICAGO AND ITS REGION

industries; the corresponding figure for Chicago is 42.3 per cent. In this respect Chicago differs radically from New York City where producers' goods industries account for less than 15 per cent of the total manufacturing employment. Cities which more closely resemble Chicago in regard to the division between producers' and consumers' goods manufactures are Cincinnati, Detroit, Pittsburgh, and Newark. The fact is well established that the demand for producers' goods is highly elastic; at the earliest signs of economic recession, private enterprise generally reduces capital outlays sharply. Hence the troughs and crests of employment are much sharper in "heavy" industries than in manufactures of consumers' goods.

This fact is well depicted by Table 6. Following the general economic collapse in 1929, industrial employment in the area outside of Chicago had dropped 53.1 index points by 1933, while such employment within

Chicago proper was falling 38.7 index points. Yet, although industrial employment in Chicago's contiguous area reacts downward with greater severity during business depressions, it also appears to respond somewhat more quickly to improved conditions and to attain slightly higher levels, relatively, than similar employment within the city proper. Illustrating this situation is the fact that during the revival of 1937 manufacturing employment in Chicago stood at 96.6 per cent of the 1929 level as compared with 101.3 per cent for the outside territory.

From the statistical evidence at hand, therefore, it appears that the industrial economy of the Chicago area, in terms of employment, stands in a favorable position. The fact that the region has not materially improved its position in the national industrial economy during recent years is of no particular local significance since most of the country's industrial areas have had similar experiences. On the contrary, the fairly stable relative position of the area during the past 20 years is a good indication of a healthy industrial structure.

Although it obviously is not possible at the present time to make reliable predictions, it nevertheless seems apparent that the impact of the war effort will permanently affect many phases of the area's industrial economy. It is estimated that the area's present (July 1942) industrial employment totals some 650,000 persons—an all-time high, and new war plants to be located in the area during the next year will employ upwards of 75,000 additional persons. In view of its central location it is likely that still other war goods factories will be located in the Chicago area during the course of the war. Inasmuch as many of these factories are expected to continue at a high level of operations after the war—producing a reduced volume of military goods and an increased quantity of peace-time products—it seems probable that the post-war relative position of the Chicago industrial area will rank higher in the total national industrial employment and output.

Table 6

INDEXES OF MANUFACTURING EMPLOYMENT IN THE CHICAGO INDUSTRIAL AREA AND IN THE CITY OF CHICAGO, 1919-1939* 1919=100

Year	Chicago Industrial Area	City of Chicago	Industrial Area Outside Chicago
1919	100.0	100.0	100.0
1921	77.4	77.0	78.6
1923	98.6	95.3	110.4
1925	96.0	91.6	111.3
1927	96.4	92.1	111.1
1929	105.9	100.4	125.2
1931	73.6	69.9	86.4
1933	64.0	61.7	72.1
1935	82.6	78.6	96.4
1937	103.6	96.8	127.0
1939	93.1	86.1	117.2

*Source: U. S. Census of Manufactures.

Chapter III

INDUSTRIAL TRENDS IN THE CITY OF CHICAGO: THE OVER-ALL PICTURE

After having examined the position, relationships, and relative importance of the Chicago Industrial Area, a more intensive analysis of recent manufacturing trends in the city proper is necessary, because in final analysis Chicago is itself the immediate subject of the Plan Commission in devising a comprehensive plan for the future economic, physical, and social development of the city.

The 14 American cities having populations in excess of 500,000 in 1940—and each is the capital city of an industrial area—accounted for 26.1 per cent of the total national value of products. Leading all these cities in the value of manufactured products is New York which in 1939, as in earlier years, maintained its industrial pre-eminence by accounting for 27.7 per cent of the value of products of the 14 selected cities.

Second position in the national industrial economy is held by Chicago, whose manufacturing concerns produced goods the value of which in 1939 amounted to 19.1 per cent of the aggregate value of manufactures of this same group of cities. (See Fig. 1.)

The industrial ascendancy of Chicago over other important cities is clearly established. In fact, Chicago surpasses its next nearest industrial rival, Detroit, by a slightly greater margin than it, in turn, is outstripped

by New York City; and the value of manufactured products for Detroit and Philadelphia combined exceed the corresponding values for Chicago only by a slight margin.

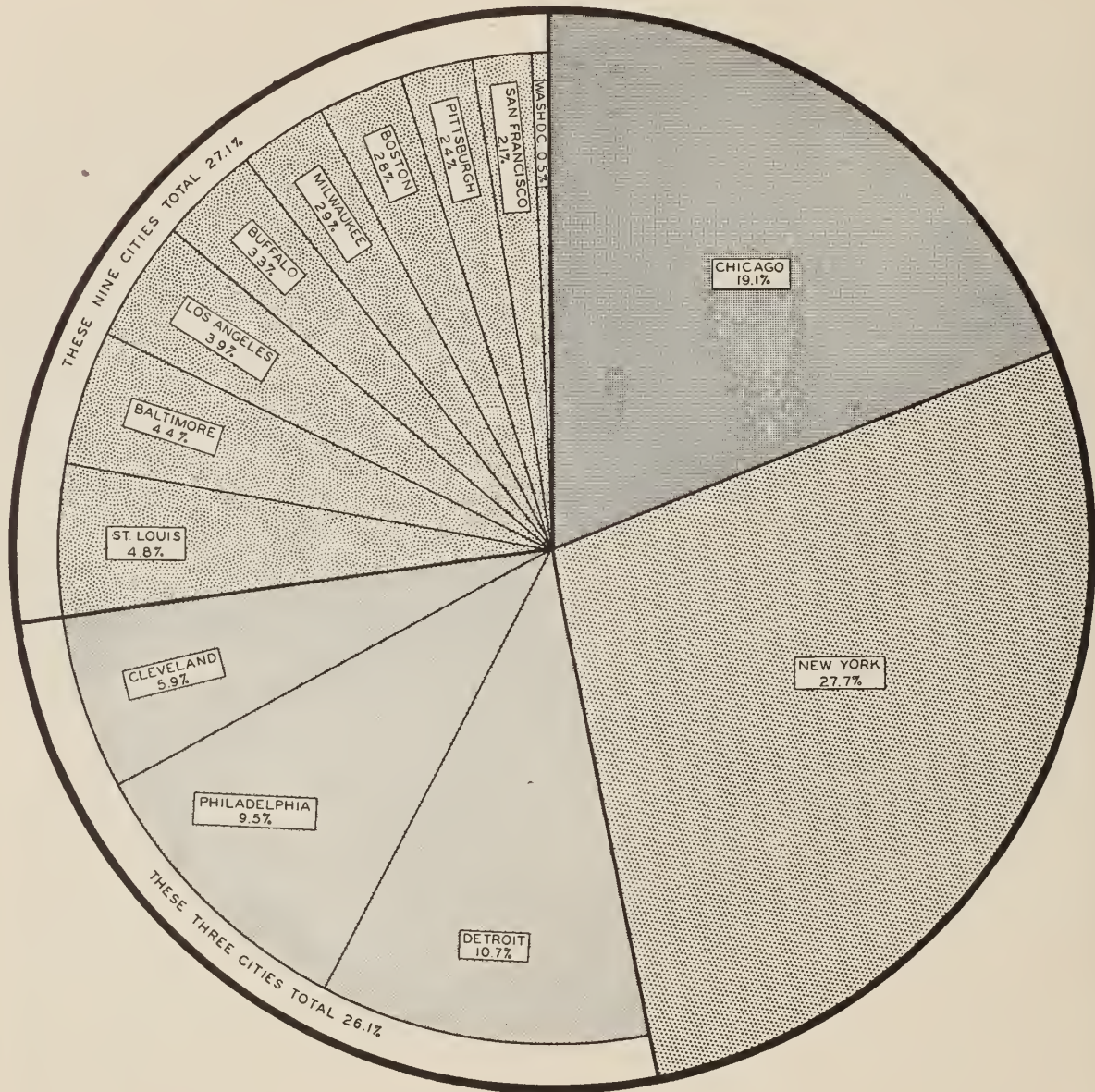
Thus Chicago at the present time appears to be well entrenched with respect to its relative industrial prominence among the country's leading cities. However, although Chicago has for many years occupied second place among the major industrial cities, its relative standing in the entire national industrial economy has undergone significant changes—a situation which is of interest not only to city planners, but also to all who have a financial stake in the future industrial development of the city.

In 1850 Chicago was credited with only one-fourth of 1 per cent of the nation's total value of manufactured products. Twenty years later (in 1870) the percentage had risen to 1.9, and by the turn of the century the city was producing 6.2 per cent of the country's manufactured products. Consistent relative gains were made during each subsequent year for which figures are available, and in 1909 the industrial concerns of Chicago produced 8.9 per cent of the nation's total value of manufacturing output. This was the city's peak year with reference to its relative importance in national manufacturing production.

CHICAGO'S INDUSTRIAL PROMINENCE

COMPARISON OF THE VALUE OF MANUFACTURED PRODUCTS
AMONG THE FOURTEEN CITIES HAVING POPULATIONS OVER 500,000

1939

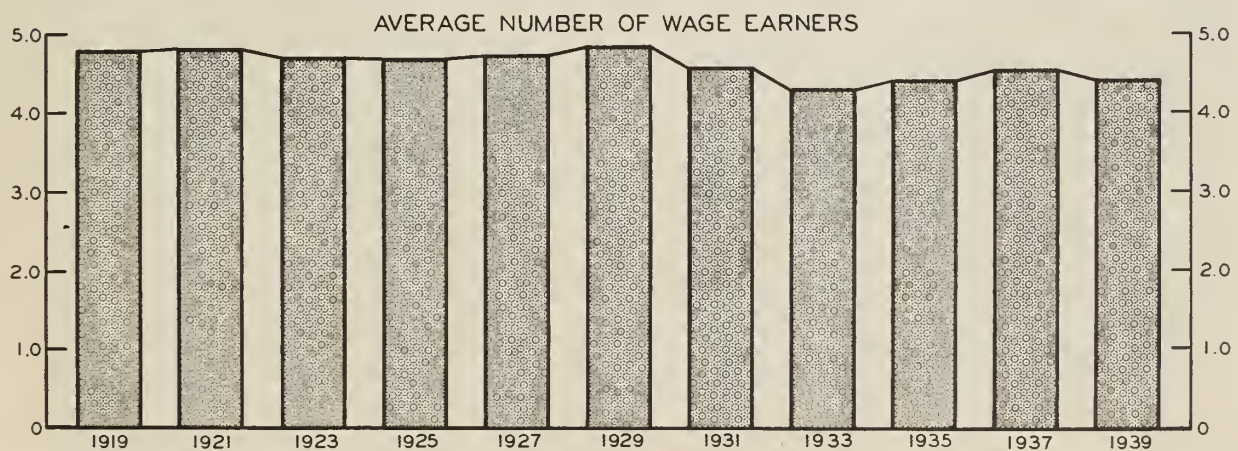
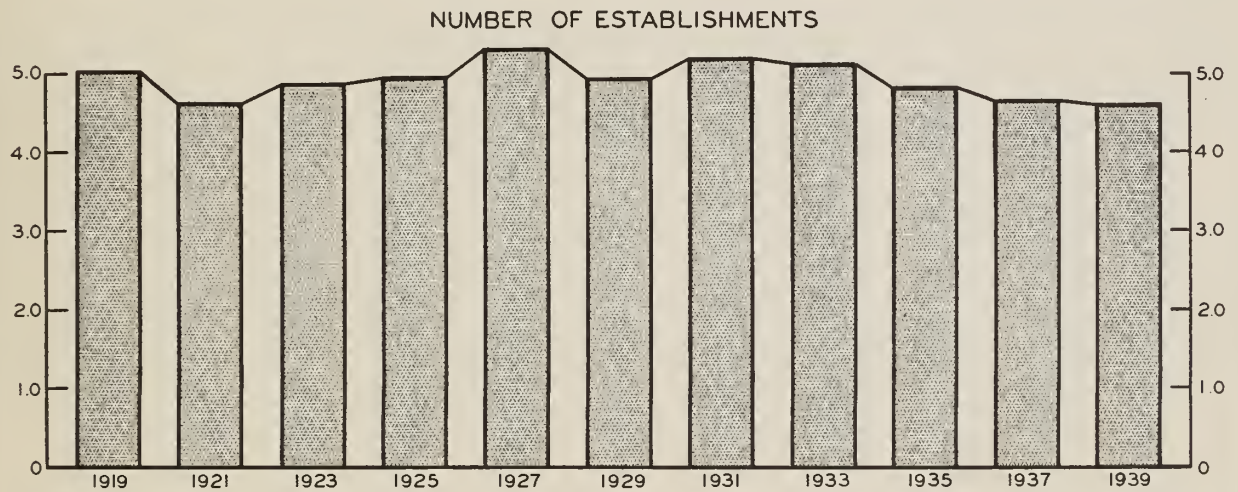
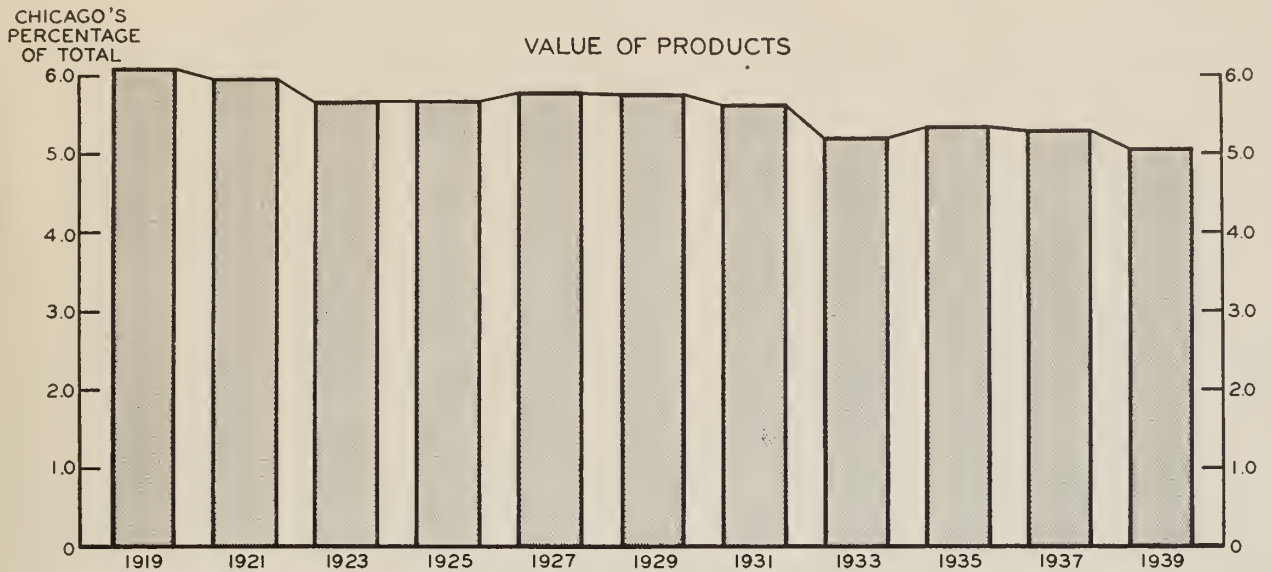


TOTAL VALUE OF PRODUCTS MANUFACTURED IN THESE CITIES - \$14,853,263,000

SOURCE: U.S. CENSUS OF MANUFACTURES, 1939

FIGURE I

MANUFACTURING IN CHICAGO IN ITS RELATION TO TOTAL U.S. MANUFACTURING OUTPUT 1919 TO 1939



SOURCE: U.S. CENSUS OF MANUFACTURES
DATA ARE FOR ALL ESTABLISHMENTS HAVING PRODUCTS VALUED AT \$5,000 OR MORE

FIGURE 2

INDUSTRIAL AND COMMERCIAL BACKGROUND FOR PLANNING CHICAGO

Table 7
A. MANUFACTURING IN CHICAGO IN ITS RELATION
TO TOTAL MANUFACTURING IN THE UNITED
STATES, RELATIVE PERCENT, 1919-1939*

Years and Items	United States	Chicago City	Chicago's Percentage of U.S. Total
1919			
Value of Products	\$60,053,895	\$3,657,425	6.1
Number of Establishments	210,426	10,537	5.0
Average Number of Wage Earners	8,431,157	403,942	4.8
1921			
Value of Products	\$41,748,686	\$2,485,819	6.0
Number of Establishments	192,275	8,860	4.6
Average Number of Wage Earners	6,484,447	311,215	4.8
1923			
Value of Products	\$58,288,281	\$3,288,004	5.6
Number of Establishments	192,293	9,299	4.8
Average Number of Wage Earners	8,202,779	384,769	4.7
1925			
Value of Products	\$60,925,575	\$3,439,163	5.7
Number of Establishments	184,108	9,112	5.0
Average Number of Wage Earners	7,879,508	370,041	4.7
1927			
Value of Products	\$60,471,716	\$3,478,754	5.8
Number of Establishments	187,801	9,955	5.3
Average Number of Wage Earners	7,857,015	372,061	4.7
1929			
Value of Products	\$68,178,340	\$3,915,053	5.7
Number of Establishments	206,811	10,201	4.9
Average Number of Wage Earners	8,380,536	405,399	4.8
1931			
Value of Products	\$39,829,888	\$2,230,917	5.6
Number of Establishments	171,450	8,888	5.2
Average Number of Wage Earners	6,163,144	282,518	4.6
1933			
Value of Products	\$30,557,328	\$1,583,259	5.2
Number of Establishments	139,325	7,157	5.1
Average Number of Wage Earners	5,787,611	249,054	4.3
1935			
Value of Products	\$44,993,699	\$2,395,024	5.3
Number of Establishments	167,916	8,052	4.8
Average Number of Wage Earners	7,203,794	317,505	4.4
1937			
Value of Products	\$60,712,872	\$3,215,298	5.3
Number of Establishments	166,794	7,737	4.6
Average Number of Wage Earners	8,569,231	391,185	4.6
1939			
Value of Products	\$56,828,870	\$2,842,572	5.0
Number of Establishments	184,244	8,476	4.6
Average Number of Wage Earners	7,877,242	347,839	4.4

B. MANUFACTURING IN CHICAGO IN RELATION TO
TOTAL MANUFACTURING IN THE UNITED
STATES, PERCENT CHANGE, 1919-1939

	United States	Chicago City
Value of Products	- 5.2	-22.3
Number of Establishments	-12.4	-19.6
Average Number of Wage Earners	- 6.6	-13.9

*Source: U. S. Census of Manufactures. Data are for all establishments having annual value of products of \$5,000 or more. Value of products expressed in 000's.

Yet as indicated by Fig. 2 and Table 7, the long-term trend in Chicago's industrial development since 1919 has been downward both relatively and absolutely, although the component elements have varied somewhat in time sequence and in the amplitude of fluctuations. For example, in 1919 Chicago supplied 6.1 per cent of the total value of manufactured products while employing only 4.8 per cent of the total number of industrial wage earners. In 1929, however, with the employment of the same proportion of wage earners, the city contributed only 5.7 per cent of the total value of manufactured products. Following the 1929 upsurge a marked downward movement was registered, nationally and locally, for each subsequent statistical biennium except during the temporary revival of 1937. By 1939 the value of products for the United States as a whole had shrunk 16.6 per cent from the 1929 level, whereas Chicago's output had declined 27.4 per cent. But of more direct importance is the fact that, whereas in 1939 national manufacturing employment was 6.1 per cent below that of 1929, Chicago's industrial employment was 14.2 per cent below the level of that year.

Amplifying the facts which the biennial census has disclosed, are the continuous statistical series of national and local factory employment. Depicted in graphic form in Fig. 3, the two index series reveal that since 1927 industrial employment in Chicago has tended to lag behind the national movement. In fact, the spread between the two indexes has widened to the extent that in June of 1941 they were separated by 28 index points, the widest divergence thus far recorded. The figure further reveals that factory employment in Chicago has in the past, diverged considerably less from the national trend on the downswings than on the upsurges of the cycles. Furthermore, Chicago employment has tended to register an increasingly slower rate of recovery in relation to the national movement following each successive downswing of the cycle. These divergences, if they should persist in the future, may carry significant implications for industrial employment in the city. It is, of course, entirely possible that the city's factory employment along with that of the area, will be permanently revitalized as a result of the national defense program, and also by increased emphasis on heavy industry after the war.

Definite qualifications, however, need to be made concerning Chicago's changed status in manufacturing employment. In the first place, this city is not unique among American cities in respect to its declining relative importance, since during recent times nearly all central cities have sustained similar losses. Moreover, Chicago's receding position does not represent a net loss since the decreases have been offset by the gains made in its contiguous area, as demonstrated in Chapter II. Thus, in terms of the previously discussed concept of an *area* economy, Chicago's position is more encouraging than the bare statistics indicate.

The trend of relationship between industrial employment and payrolls in Chicago is revealed by Figure 4. Compared with employment, payrolls declined more precipitously and further from the 1929 prosperity peak to the depression low point in 1933. In terms of index numbers the employment index receded 53.9 points during this period while the index of payrolls was dropping 79.4 points. Such a rapid and drastic shrinkage in the purchasing power of Chicago's 348,000 factory employees seriously affected all phases of the city's economic struc-

TREND OF MANUFACTURING EMPLOYMENT IN CHICAGO COMPARED WITH FACTORY EMPLOYMENT IN THE UNITED STATES 1925 TO 1941

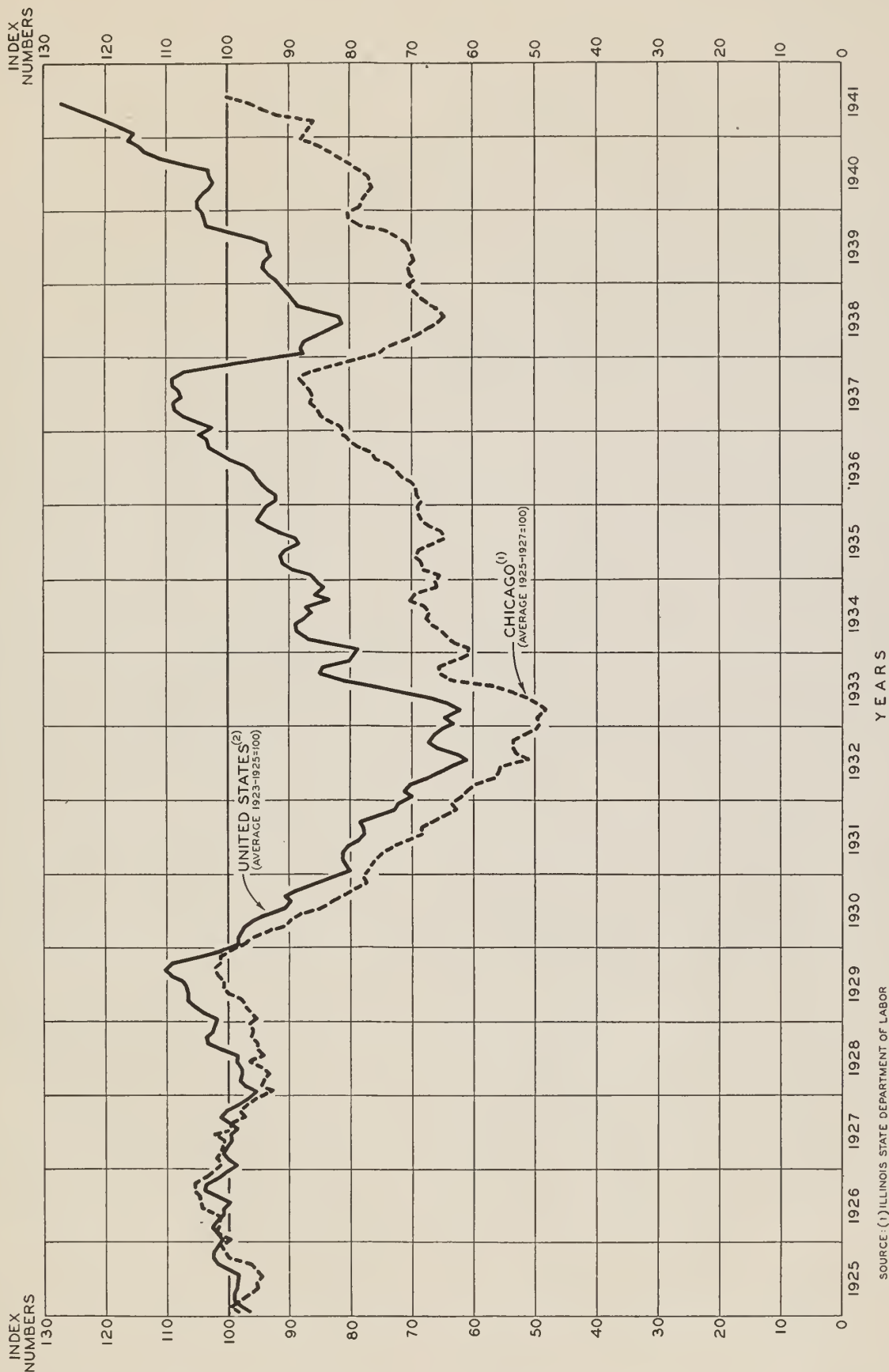


FIGURE 3

INDEXES OF EMPLOYMENT AND PAYROLLS IN MANUFACTURING INDUSTRIES IN CHICAGO 1925 TO 1941

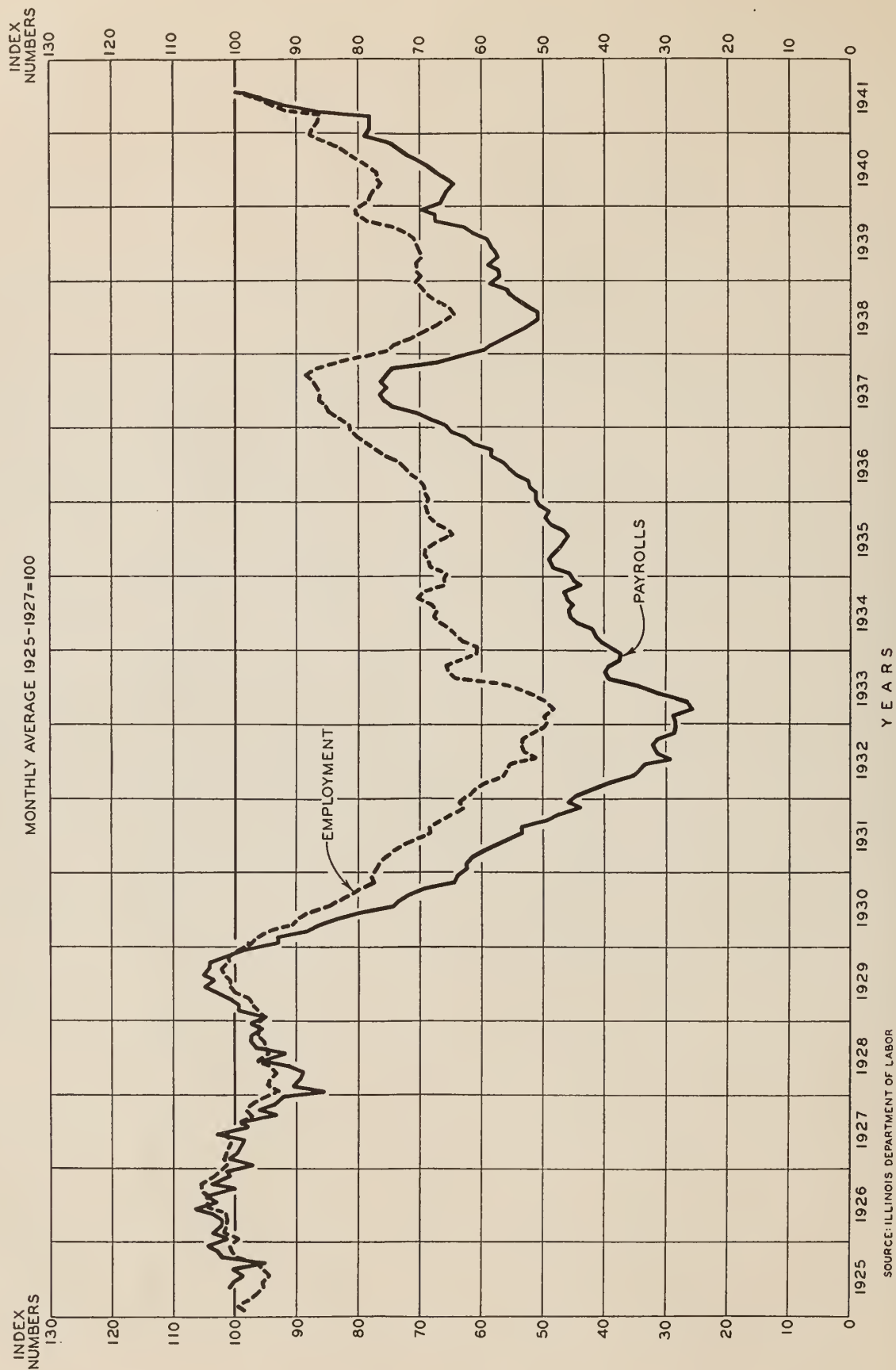


FIGURE 4

INDUSTRIAL TRENDS IN CHICAGO AND ITS REGION

ture, contributing to the general collapse in land values, to delinquencies and foreclosures, to widespread business failures, and to the general economic paralysis which prevailed for approximately four years before the beginning of the upswing in 1933. However, during the recovery stage of the cycle, the spread between employment and payrolls gradually began to narrow, and in July, 1941 the two indexes were at an equilibrium for the first time in 11½ years.

Two elements have aided materially in the post-depression improvement of the relative status of wage payments: (1) federal legislation relating to wages and hours of labor has tended to increase the general level of wage payments; and (2) the growth of labor organizations with concomitant wage increases through collective bargaining has had a similar effect. Since the wage level tends generally not only to lag behind the level of employment, but also to surpass its upper and lower points, it is quite likely that, during the ensuing period of accelerated economic activity, the general wage level will attain a relatively higher position than that of employment. Moreover, such a higher level may be sustained for a longer period than would ordinarily obtain, as a result of the functioning of two elements previously suggested. On the other hand, the President has indicated that wage freezing might become necessary, as a war measure. The primary purpose would be to prevent inflation and curtail non-essential purchases.

TRENDS IN SPECIFIC INDUSTRY GROUPS

An analysis of employment trends within specific industries will assist in localizing and assigning reasons for the recent changes absolute as well as relative, in Chicago's industrial employment.

Slaughter and Meat Packing. The industries in this group rank high in their importance to Chicago's economy. After attaining the unprecedented payroll total of 46,473 wage earners at the close of World War I, the level of employment began to sag to the extent that a wage earner personnel of only 19,281 was reported for 1939, a drop of 27,193 or 58.6 per cent, whereas total manufacturing employment in Chicago declined 56,103 or 13.9 per cent during the same period. By far the greater portion of the current employment is divided, fairly evenly, between the two major concerns of Armour and Company and Swift and Company.

The employment decline in meat packing has been attributable to the development of new centers for the industry, notably in Texas and Missouri. The reasons for this decentralization have been detailed in the historical section of this report.

The volume of employment in Chicago's meat packing industry is directly contingent upon the quantity of livestock shipped in from the contributory producing areas. Hence, the future of the industry, in addition to technological and national economic changes, is to a large extent dependent upon agricultural development in those live-stock-producing states which serve the Chicago packing houses, especially the midwestern and northwestern groups of states. In turn the future agricultural economy of these regions will depend not only upon the natural forces of soil and weather but also upon the farm policy and program of the federal government. In general, the present program of encouraging increased farm productivity of both grains and livestock may tend to result in a larger inflow of livestock to Chicago. Furthermore, the war and post-war readjustments may stimulate, for a time at least, European

demands for meat and meat products. However, these possible increased demands may be partially or completely negated by reciprocal trade agreements with South American countries and a consequent gain in meat importations from these sources.

It would seem reasonable to conclude, therefore, that in light of the many opposing variables the maximum expectation for future employment in the meat packing industry is a relative degree of stability at near its present absolute level, or possibly a very slight employment gain. In view of the gains which are expected to be registered by the meat packing centers in other parts of the country, the suggested stabilization of Chicago's packing concerns implies a further relative shrinkage in the city's position in the national picture. As Table 8 shows, a severe relative decline has already occurred, inasmuch as in 1939 Chicago packing houses employed only 16.1 per cent of the national total of wage earners in meat packing industries contrasted with 28.9 per cent in 1919.

Table 8
NUMBER OF MANUFACTURING WAGE EARNERS IN
SELECTED CHICAGO MANUFACTURING INDUSTRIES
EXPRESSED AS PERCENTAGES OF UNITED STATES
TOTALS, 1919, 1927, 1935, 1939*

Industry Group	1919	1927	1935	1939
Slaughtering and meat packing...	28.9	21.1	18.2	16.1
Iron and steel works and rolling mills.....	(1)	3.0	3.9	3.7
Printing, publishing, and allied industries.....	12.5	11.7	9.3	11.3
Electrical machinery, appliances and supplies.....	6.5	7.4	6.2	9.2
Foundry and machine shop products	8.3	3.4	6.3	6.8

*Source: U. S. Census of Manufactures.

¹Not available.

Iron and Steel Works and Rolling Mills. Employment in iron and steel works and rolling mills, although numerically fairly constant for the past 10 years, has receded slightly in its relation to total United States employment in this industrial category. This appears to be attributable to the expansion which has taken place in other steel centers, including the Indiana Calumet Area. The industry seems to be concentrated and anchored in the Indiana area and many indications point to increasing expansion of the Indiana mills, although the entire situation may be altered by the present war. Moreover, the largest steel plant in Chicago, the Carnegie Illinois Steel Corporation, is a unit of the corporate empire of the United States Steel Corporation, and it is not likely that the Chicago plant will undergo any further material expansion as site area is not available; rather, a diversion of operations from the Chicago plant to other units of the parent company might conceivably ensue following the war. It should be noted that Republic Steel is currently expanding its present Chicago plant in the Calumet district.

The steel industry, along with many other Chicago capital goods industries, is almost completely dependent upon outside markets for the disposal of its manufactured products, and its welfare is thus measured in terms of national and, in the case of the war, international economic developments. In view of the enormous new capital outlays and the plant expansions as a result of the war effort, the steel industry generally may find its operations curtailed immediately following the close of hostilities. However, the various effects of such a pos-

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sible slump may be lessened or nullified by the suggested post-war public works program. In any event, any post-war recession should be of relatively short duration, since the manufacture of civilian automobiles will undoubtedly be resumed on a large scale in response to the cumulative demand built up during the war period.

Men's and Women's Clothing. As brought out in the historical section, the men's and women's clothing industry has experienced a significant decline in importance. During the 10 years prior to 1919, some 41,000 wage earners were employed in Chicago in this industry. In 1935 (the latest date for which comparable figures are available) workers in the clothing industry totaled only 29,165, a drop of 29.3 per cent from the peak years. The strongly entrenched position of New York City and the rise of new style centers seem to present barriers against future competitive improvement by Chicago's industries. A realistic appraisal of the situation indicates that Chicago will, at best, maintain or perhaps register only slight gains in the number of employees in both the men's and women's apparel industry.

One important manufacturer of men's clothing reports that its current level of employment is 20 per cent under that of 1929, whereas the present personnel of another establishment totals less than one-half of the pre-war volume. Although many firms liquidated during the depression, there are at present at least four large nationally prominent establishments that market their product throughout the country. For the most part, these concerns manufacture men's suits selling in the upper middle price range; this is in contrast to the pre-war period when Chicago's clothing firms produced for the quality market, both local and national. In view of the slender possibility of Chicago's clothing industry competing for the mass market now dominated by companies in other manufacturing centers, it does not appear likely, in the normal course of events, that the present employment level will vary to any great extent during the predictable future.

Railroads and Their Subsidiary Industries. As the country's leading railroad center, employment in railroad shops and ancillary industries is an important source of economic support for thousands of Chicago families. Although no employment figures are available for the city proper, three railroad shops alone are currently employing some 22,000 persons in the entire Chicago industrial area. Most significant is the fact, however, that in the flourishing railroad period of the middle 1920's, employment in these same shops was consistently averaging over 40,000. This drastic employment reduction is particularly significant because the wages of railroad workers have for a number of years been relatively high; hence considerable shrinkage has occurred in the total income stream, both inside the city and within the region, as a result of the greatly reduced railroad employment.

The slump in railroad employment, starting gradually in the late 1920's, did not become pronounced until 1931, as shown in Table 9. In addition to the general prostration of the railroads during the depression, two nationally important factors and one local factor have contributed to the declining importance of railroad employment: (1) technological advances in railroad operation within the recent past, which have greatly reduced the man power and time required to transport a unit of revenue burden; (2) competing methods of transportation, such as trucks, busses, and private automobiles; and (3) of important

Table 9

INDEX OF STEAM RAILROAD EMPLOYMENT IN CHICAGO, 1915-1940*

1923 = 100

Year	Index	Year	Index
1915.....	90.8	1928.....	89.8
1916.....	87.7	1929.....	89.7
1917.....	93.6	1930.....	76.9
1918.....	96.0	1931.....	63.5
1919.....	97.0	1932.....	48.8
1920.....	105.2	1933.....	48.3
1921.....	91.3	1934.....	50.9
1922.....	86.1	1935.....	51.9
1923.....	100.0	1936.....	58.2
1924.....	85.8	1937.....	56.8
1925.....	94.6	1938.....	49.7
1926.....	98.4	1939.....	50.4
1927.....	92.8	1940.....	53.3

*Based on employment of three major railroads in Chicago.

local significance, the migration of several railroad yards and shops from Chicago proper to points slightly beyond the city limits and to locations beyond the region itself; for example, the enlargement of the Proviso Yards by the Chicago and North Western Railroads and the removal of the principal shops of the Illinois Central Railroad from Chicago to Paducah, Kentucky.

The net effect on employment as a result of the interplay of these factors, particularly the first named, is illustrated by Table 10. It will be observed that subsequent to 1933 the relative importance of railway employment in respect to carloadings began to decline to the point where, in 1940, carloadings stood at 82.9 per cent of the 1929 level whereas employment was at only 59.4 per cent of the 1929 volume.

Table 10

INDEXES OF STEAM RAILROAD EMPLOYMENT AND CARLOADINGS IN THE CHICAGO REGION, 1920-1940*

1929 = 100

YEAR	Employment Index	Carloadings Index
1929.....	100.0	100.0
1930.....	85.7	86.7
1931.....	70.8	68.9
1932.....	54.4	50.2
1933.....	53.8	53.7
1934.....	56.8	59.6
1935.....	57.8	67.0
1936.....	64.8	77.8
1937.....	63.3	83.8
1938.....	55.4	61.9
1939.....	56.1	74.8
1940.....	59.4	82.9

*Source: Employment index based on number of employees of three major railroads in Chicago. Carloadings index based on data furnished by Association of American Railroads.

The railroads, of course, are not unique in respect to employment declines resulting from technological changes. The major portion of Chicago industries have in varying degrees, and at one time or another, experienced declines in the relation of man power required per physical unit of output. Therefore, the statistics concerning railroad operations not only reflect the situation of Chicago railroads concerning employment changes caused by technological advances, but also illustrates a general principle whose operation is well recognized.

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The plight of the railroads has also been reflected in the normal operations of ancillary industries—notably the manufactures of railway equipment and supplies. The Pullman Car Works, one of the country's leading producers of rolling stock and from 1910 to about 1926 a very important unit in Chicago's industrial organization employed during 1940 only about one-fourth as many workers as in 1923.

Substantial employment increases may be expected during the next few years, both among the railroads and in the Pullman Company as a result of the war and, more particularly as a result of the automobile and tire situation. However, no evidence now at hand indicates any substantial employment gains of a permanent nature likely to carry over into the post-war period. This prediction is based not only upon analysis of past as well as current trends and tendencies, but also upon the consensus among qualified transportation experts, who generally hold that no factors, present or in prospect, in the national or local scene would indicate any substantial long-term employment revival in the railroad and derived industries.

In contradistinction, however, to the group of major industries in which employment declines have ensued or for which future improvement is exceedingly problematical, there is an array of industries which have more or less maintained or improved their position during the recent past, and which should register gains of varying degrees in the future.

Printing and Publishing. Strategically situated for advantageous national distribution over a network of common carriers, the printing industry of Chicago has, except for minor variations, maintained a fairly constant absolute employment level since 1919, although it has declined somewhat in its relative national importance. In addition to the geographical advantages of Chicago, the industry benefits from the increasing demands of the local market. Ownership is quite highly concentrated, two concerns alone accounting for over one-half of the total employment in the city's printing and publishing firms. It would appear reasonable to predict a slow, steady growth in employment as the result of increased local demands and the obvious advantages possessed by Chicago as a distributing point for printed matter.

Electrical Machinery, Appliances, and Supplies. According to the 1939 census enumeration, more wage earners were employed in that year in the electrical machinery, equipment and supplies industries than at any other time in the city's history. Moreover, significant gains have been registered in respect to Chicago's share of the national total, rising from 6.5 per cent in 1919 to 9.2 per cent in 1939. Most of the city's electrical products manufacturers have been established for a number of years and the employment gains during recent times have been, for the most part, the result of expansion of existing plants. Such expansion has been the direct outgrowth of the more widespread use, locally and nationally, of an ever increasing assortment of electrical goods. Durable consumers' goods constitute the bulk of the manufactured output of Chicago's electrical goods plants, the largest being Western Electric Company, one of the country's leading manufacturers of telephone equipment and supplies. Straddling the Chicago-Cicero boundary line, this company normally employs many thousands of workers, a substantial part of whom are skilled wage earners and technicians. The remainder of Chicago's many electrical goods plants range from

relatively small factories to a manufacturer of radio receivers employing upwards of 6,000 persons.

The long-term outlook for Chicago's electrical goods establishments appears to be most favorable. The concerns located in the city are well entrenched competitively, and most of them serve a national, as well as a local market. A significant factor, however, in the future employment expansion of this industry in the city proper is the growing tendency of the machine products concerns to migrate to points slightly beyond the city limits. For example, in 1937, a manufacturer of electrical equipment, employing 1,600 workers, moved from Chicago to the Clearing Industrial District outside the city's boundaries.

Foundry and Machine Shop Products. The third largest employer of manufacturing labor in Chicago, which for the past 15 years has registered consistent gains in personnel, is the foundry and machine shop products industry. It has also improved its national competitive position since 1927 and its employees in 1939 were 6.8 per cent of the national total compared with 3.4 per cent in the earlier year. With the exception of the three major companies in this category, whose aggregate employment accounts for slightly over one-third of the 1939 total of 33,427 wage earners in the industry, the firms in this group are generally small and are widely scattered throughout the city. Although a few are engaged in the production of durable consumers' goods, for all practical purposes it may be said that the products of the group as a whole are of the producers' goods variety, and the scope of the industry's operations is thus dependent upon the demand for capital goods, including the construction industry. The demand for goods of this type, as previously demonstrated, ordinarily fluctuates more widely than does the demand for consumers' goods. The impetus of the rearmament program, together with general economic recovery, have greatly increased requirements for producers' goods, resulting in a substantial employment gain for all manufacturing concerns of the capital goods type.

On the basis of past trends and current tendencies, further increases in employment may reasonably be expected in the foundry and machine shops products industry, over and above the gains which may be ascribed to the war situation. However, the extent of such predicted future gains cannot, of course, be suggested with any degree of accuracy. In the opinion of informed persons the existing plants could expand the scale of their operations, and hence their personnel, to a considerable extent if the future demands should warrant.

Furniture and Finished Lumber Products. With 17,457 wage earners on their rosters in 1939, companies engaged in the fabrication of furniture and finished lumber products ranked eighth in order of employment importance among Chicago's industries. This was the largest number of workers ever recorded for this industry group, and surpassed the previous high figure for 1929 by a fair margin. The production of household furniture and accessories gives employment to the largest portion of the workers, with the manufacture of store and office fixtures accounting for another large fraction of the total personnel. If the net supply of consumer purchasing power continues after the war at a reasonably high level, resulting in the rapid formation of new families and the establishment of homes, then the operations of Chicago's furniture industry will more than

likely gather increased momentum and employ more labor. In fact, the current spurt in its operations may enable the city's furniture industry to capture permanently a larger share of the market. Moreover, the presence of the Furniture Mart tends to promote a demand for the products of Chicago furniture makers and is therefore a definite element of strength for the furniture industry of the city.

Non-ferrous Metals and their Products. Demand for the output of local non-ferrous metals industries is, to a great extent, derived from the electrical products manufactures and from concerns utilizing non-ferrous metals for ornamental trim, office furniture and equipment and the like. In 1939 this industry group reported 12,667 wage earners, ranking ninth in order of importance in Chicago. As a dependency of other industries, any employment advance which might be registered by the non-ferrous group would necessarily tend to lag behind that of the manufacturing concerns from whose demands its operations are derived. It would therefore seem to follow that, since the predicted future employment trends among the parent group are expected to be upward, the number of workers in the subsidiary group will probably also tend to register more or less proportionate gains, in due course of time.

Chemicals and Allied Products. Although not of great relative employment significance at present, (9,313 employees in 1939) the city's chemical and allied products manufacturing group forms a nucleus which might easily grow into a much larger industrial organization. This observation is suggested by the generally recognized current of national trends in the chemical industry as a whole. Foremost among such trends is the growing use of plastics and synthetic fiber products, and the widespread substitution of rayon and similar chemically produced fabrics for silk and other textiles. Recent developments in international trade and political relations, moreover, have strengthened considerably the domestic demands for chemical and allied products. For example, the stoppage of silk importations has led to a greatly increased demand for such substitute fabrics as rayon, nylon, and the like; also the European nations have virtually ceased to export chemical products to the United States. In addition to these positive factors, the war program has greatly intensified the need for explosives and other chemicals.

Although at present many of the country's major chemical plants are located in sections of the industrialized eastern seaboard, we are now witnessing an inland migration of key industries for military reasons. By virtue of its unexcelled transportation system, its centralized location geographically, and its present nucleus of chemical plants and research facilities, Chicago apparently possesses the essential requisites for an expansion of its chemical industry.

Food and Kindred Products. Exclusive of the meat packing houses, Chicago's manufacturers of food and kindred products provided employment for 37,794 wage earners during 1939. The producers of bakery products and the manufacturers of candy and confections in 1939 employed 13,282 and 10,328 workers, respectively, or 62.4 per cent of the total number of wage earners within this broad industrial classification. Consistent employment gains have been registered since the first enumeration of 6,437 employees in 1909; and the latest (1939) figure represents an all-time peak, according to the census of manufactures. Bakery products are a type of

consumers' goods for which the demand is now relatively inelastic. As a food necessity, the operations of the baking industry are usually curtailed only slightly during times of business depression. With the increase in the number of food products outlets, and the further decline in home baking and the growth of population, the local market for bread and other bakery products is likely to become an expanding one over a long-term period, irrespective of other factors. Moreover, an expediting force in the market's advance in the immediate future is the increasing volume of consumer purchasing power resulting from business revival. These gains in general consumer income may be reflected particularly in quickened demands for bakery products other than bread, such as pastries, cakes, etc.

In contrast to the baking industry, the candy and confectionery enterprises respond to a demand similar to that of other producers of luxury and semi-luxury consumers' goods. Hence, employment levels in the confectionery industry tend to slump considerably during depressions when excess consumer purchasing power is at a low ebb, and to swing upward when conditions improve. The confectionery industry has for some years registered significant gains in its average employment, and the current number of workers is estimated to exceed somewhat the 1929 level. Several of the Chicago confectionery establishments are enjoying not only an expanding local market but distribute a large share of their output on a national scale. Apart from the temporary sugar rationing and the inherent cyclical nature of the demand for their products, no serious negative factors which would tend materially to alter the expected gradual upward trend of employment in the industry in the long-term future, are in evidence at the present time.

Leather and Leather Products. The leather and leather products industry group, whose activities gave employment to 9,890 wage earners in 1939, is probably fairly well anchored inside the city because of proximity to the stockyards, a principal source of its raw materials. Two shoe manufacturing concerns account for almost one-half the total employment. In view of the strongly entrenched position of the shoe industry in St. Louis and in several eastern manufacturing centers, it is not likely that Chicago will make important gains as a footwear manufacturing city. In general, it seems reasonable to predict a relatively stable future employment position for the leather and leather products industrial group.

Miscellaneous Industries. Because of the wide diversification of their manufactured output, it is not possible to attempt to forecast future employment trends in the miscellaneous group of Chicago's industries. With a current aggregate employment of some 30,000 workers, the great majority of the plants in the unclassified group are small. They are tributary to many of the larger parent establishments upon whose demands their operations depend. About all that can prudently be suggested respecting their future employment trends, is that their numbers of wage earners will in general tend to fluctuate in a manner similar to employment changes among Chicago's industries as a whole.

CONCLUSION

A critical evaluation of both the positive and negative economic factors which carry important implications for Chicago's future industrial employment trends leads to the belief that, aside from temporary dislocations caused by the war, the industrial economy of the city proper is

attaining a certain degree of maturity, with a distinct tendency for its relative employment level gradually to drift below the national level. However, this tendency may become nullified—or even reversed—if some of the city's new war plants continue their operations in the post-war era. Considering the fact that such airplane parts and assembly plants as Douglas, Chrysler, Studebaker and Buick have permanent factories in Chicago and the Chicago area, it is possible that the area may become a leading aircraft producing center after the war. Other new war manufactures which are likely to strengthen the area's post-war economy are the aluminum plant at Argo and the synthetic rubber factory in Gary. Yet even though the war effort confers no per-

manent benefits on the industrial economy of Chicago, it seems reasonable to conclude that no sudden major employment changes or dislocations are likely to occur in any industrial category within the predictable future. But there are two major forces at work within the city of Chicago which, unless their implications are recognized and dealt with appropriately, may profoundly alter the economic background of Chicago. One of these forces—population decentralization—has already been examined in a previous report of the Chicago Plan Commission. The other one—the decentralization of the city's manufacturing activities—is treated in the following section.

Chapter IV

THE DECENTRALIZATION OF CHICAGO INDUSTRY

Industrial decentralization, or the relocation of Chicago industrial establishments from within the city proper to points outside Chicago's political boundaries, is not a particularly recent feature of the city's industrial economy. Decentralizing tendencies were in evidence as early as 1903, when the Western Electric Company moved from Chicago to Cicero. An important factor which accelerated the out-city relocation of industry was the establishment in 1910 of the Clearing Industrial District. This area, situated just south of 65th Street where a prong of the city extends from Cicero to Harlem Avenue, is the present focal point of a large portion of Chicago's migrating manufacturing plants and is the source of employment for some 17,000 persons. In addition, the great manufacturing development which occurred in the Calumet-Indiana and South Chicago regions in the 1906-1916 period attracted to these sections a number of Chicago's industries and diverted manufactures which otherwise might have settled in Chicago proper.

During the 11-year period 1925-1935, 127 manufacturing companies moved from Chicago to various points within the Chicago Industrial Area which, as previously defined, includes the Illinois Counties of Cook, DuPage, Kane, Lake, and Will, and the Indiana County of Lake. The peak year for suburban relocation was 1929, when 27 plants moved out from the city. The outward movement of the city's industries declined sharply during the depression years but by 1936 the tempo of decentralization had again quickened, although the post-depression high point of 13 plant withdrawals during 1937 was less than half the 1929 level.

Nevertheless, despite the decreased rate of industrial migration during the post-depression recovery years, the outward movement of industry seems to be a continuous phenomenon of Chicago's industrial economy, and if past trends and responses are indexes, an acceleration in the rate of out-city industrial relocations may be anticipated if we have a marked post-war business revival.

THE SHIFT ANALYZED

Forty-seven manufacturing plants shifted their locations from the city during 1935-1940. Four of these—relatively small in size—moved to points immediately outside the Chicago Industrial Area. The remaining 43, which removed to points within the Chicago area, employed an aggregate of 6,825 workers receiving average annual wages estimated at over \$9,000,000 (Table 11). As the new industrial plants within the city employed

only 2,834 wage earners with a payroll of about \$3,800,000 the city sustained, as a result of this migration of industries, a net loss of 4,000 economic opportunities. Obviously, from the standpoint of Chicago proper, no fundamental economic problems are involved if the effects resulting from the outward movement of industry are offset by new industries locating inside the city. However, as indicated above, this has not been the case in the recent history of location of new industries in the Chicago area.

Table 11

MANUFACTURING CONCERNS WHICH HAVE MIGRATED FROM CHICAGO TO LOCATIONS WITHIN THE CHICAGO INDUSTRIAL AREA, 1935-1940*

YEAR	Number of Concerns	Estimated Number of Wage Earners	Estimated Annual Wages
1936	7	650	\$ 845,000
1937	13	3,260	4,238,000
1938	7	610	793,000
1939	7	1,060	1,484,000
1940	9	1,245	1,867,500
Total ¹	43	6,825	\$9,227,000

*In preparing this list considerable aid was obtained from the Industrial Development Records of the power and light companies serving Chicago and Northern Illinois. This was supplemented and checked by reference to the files of chambers of commerce in the principal towns of the region and in some instances by a field survey.

¹Includes 17 establishments, employing 3,307 wage earners, which have migrated to the Clearing Industrial District.

Table 12

MANUFACTURING CONCERNS ESTABLISHED IN CHICAGO, 1935-1940*

Year	Newly Organized Industries	Migrated from Outside Area	Estimated Number of Wage Earners	Estimated Annual Wages
1936	1	1	251	\$ 326,300
1937	1	2	363	471,900
1938	4	9	1,077	1,400,100
1939	7	6	897	1,255,800
1940	5	6	246	369,000
Total	18	24	2,834	\$3,823,100

*Sources: Commonwealth Edison Company and Chicago Association of Commerce.

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Table 13

DISTRIBUTION BY INDUSTRY GROUPS OF MANUFACTURING CONCERNS LOCATING IN THE CHICAGO INDUSTRIAL AREA, 1935-1940*

Industry Group	City of Chicago	Industrial Area Outside Chicago	Total
TOTAL	42	154	196
Machinery, except electrical	5	25	30
Chemicals and allied products	5	24	29
Iron and steel and their products	4	23	27
Furniture and finished lumber products	3	12	15
Miscellaneous industries	3	9	12
Electrical machinery, apparatus and supplies	4	9	13
Stone, clay, and glass products	11	11
Food and kindred products	3	8	11
Paper and allied products	5	5	10
Petroleum refining and allied products	1	9	10
Automobiles and automobile equipment	2	5	7
Non-ferrous metals and their products	2	4	6
Transportation equipment, except automobiles	2	3	5
Men's and women's clothing and furnishings	1	3	4
Printing, publishing, and allied industries	3	3
Textile mill and fiber products	1	1	2
Leather and leather products	1	1

*In preparing this list considerable aid was obtained from the Industrial Development Records of the power and light companies serving Chicago and northern Illinois. This was supplemented and checked by reference to the files of chambers of commerce in the principal towns of the region and in some instances by a field survey.

Types of Industry. A comparison of the types of industries that have located in Chicago with those that located in the area contiguous to the city is afforded by Table 13. It will be noted that both in Chicago and in its outer region the new and relocated industries are mainly of the producers' and durable consumers' goods types. Approximately 50 per cent of the plants which came to the area outside the city during the 1935-1940 period were manufacturers of capital goods. The trend is, of course, helping to increase still further the present concentration of producers' goods industries in the industrial area outside the city. Chicago proper is itself contributing to the increased concentration of capital goods enterprises in the adjacent industrial area. During the five-year period studied it was found that approximately half of the 43 companies that left Chicago for the suburban region were manufacturers of capital goods. This exodus of some of the city's producers' goods industries would have added a degree of employment stability to Chicago's industrial economy, if their loss were at least compensated by the location of consumers' goods enterprises inside Chicago. However, those few industries which have been established in Chicago in recent years have been chiefly of the producers' goods type as has been shown. Also, as previously pointed out, there has been a net employment loss to the city through the exodus of industries.

Size of Plants. Another factor of significance in the relocation of Chicago's industries is the relatively larger initial size of the plants that are being established beyond the city limits as compared with those locating inside the city. Furthermore the new and relocated outside industries tend to expand more rapidly than those inside

the city. As shown by Tables 14 and 15, only 2 plants employing initially more than 200 workers each were established in Chicago during the 1935-1940 period, whereas 7 concerns in this same employment category left the city during these years. The net result of such industrial relocations is a displacement of many of the city's medium-sized industries by small manufacturing plants.

Table 14

SIZE DISTRIBUTION OF MANUFACTURING CONCERNS LOCATING IN THE CHICAGO INDUSTRIAL AREA, 1935-1940*

Number of Wage Earners	Number of Concerns Locating in Industrial Area		
	Chicago	Outside Chicago	Total
TOTAL	42	154	196
10 to 50	26	104	130
51 to 100	6	25	31
101 to 200	8	13	21
Over 200	2	12 ¹	14

*In preparing this list considerable aid was obtained from the Industrial Development Records of the power and light companies serving Chicago and northern Illinois. This was supplemented and checked by reference to the files of chambers of commerce in the principal towns of the region and in some instances by a field survey.

¹Includes 2 plants employing 300 workers each; 4 plants employing 400 wage earners; 1 plant employing 1,600 persons; and 1 defense industry (near Wilmington) which is ultimately to employ some 10,000 workers.

Table 15

SIZE DISTRIBUTION OF MANUFACTURING CONCERNS WHICH HAVE MIGRATED FROM CHICAGO TO LOCATIONS WITHIN THE CHICAGO INDUSTRIAL AREA, 1935-1940*

Number of Wage Earners	Number of Concerns
TOTAL	43
10 to 50	20
51 to 100	6
101 to 200	10
Over 200	7 ¹

*In preparing this list considerable aid was obtained from the Industrial Development Records of the power and light companies serving Chicago and northern Illinois. This was supplemented and checked by reference to the files of chambers of commerce in the principal towns of the region and in some instances by a field survey.

¹Includes 1 plant employing 300 workers; 2 plants employing 400 persons; and 1 plant employing 1,600 wage earners.

New versus Old Industries. After making allowances for the 43 industrial companies that left Chicago for other points in the area during the 1935-1940 period, it is found that the industrial area as a whole gained 154 manufacturing concerns, 59 (or 38.5 per cent) of which were originally situated in places outside the Chicago Industrial Area. The remaining and major proportion (61.5 per cent) of the region's industrial development during the five-year span resulted from the establishment of newly organized industries. Significant relative differences were found to exist, however, in the proportion of relocated plants to newly organized establishments in the city proper and in the area outside Chicago. Well over half of the manufacturing enterprises which located within the city during the five-year period had migrated to the city from points entirely outside the Chicago Area; whereas approximately 28 per cent of the plants located in the area outside the city were concerns that removed from Chicago. The relative importance of Chicago proper as a contributor to the development of the outside area is thus again illustrated.

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In this connection it is interesting that during the period reviewed only two manufacturing plants moved from the Chicago Industrial Area into the city proper. However, a few intraregional shifts of industries occurred in some of the outlying portions of the area, but they had no particular economic implications.

Origin of Plants. As Table 16 shows, the geographical origins of the manufacturing plants that have migrated to the area are rather widely scattered, and only a relatively small portion of the total inflow of industries came from nearby states. Unfortunately, there is no record of the companies that migrated from Chicago and its industrial region to remote localities during the 1935-1940 period. However, all available information suggests that such distant industrial migration has been but a minor feature of the current decentralization trend. By far the most significant movement in recent years has been that from Chicago to its industrial hinterland. The importance of this fact is obvious; draining off the industry of the city proper, the relocation of virtually all such migrating concerns in the Chicago Industrial Area is tending at least to maintain the status quo of the area's if not the city's, industrial economy.

Table 16

GEOGRAPHICAL ORIGIN OF MANUFACTURING CONCERNS WHICH HAVE MIGRATED TO THE CHICAGO INDUSTRIAL AREA, 1935-1940*

State or Division	Number of Plants Which Have Migrated		
	To Chicago	To Area Outside Chicago	Total
TOTAL.....	24	35	59
Wisconsin.....	...	6	6
Michigan.....	1	5	6
Indiana.....	4	1	5
Illinois.....	1	4	5
Minnesota.....	2	...	2
Ohio.....	1	3	4
Middle Atlantic States....	4	4	8
West North Central States	...	6	6
Other States.....	11	6	17

*In preparing this list considerable aid was obtained from the Industrial Development Records of the power and light companies serving Chicago and northern Illinois. This was supplemented and checked by reference to the files of chambers of commerce in the principal towns of the region and in some instances by a field survey.

DISTRIBUTION IN THE AREA

Table 17 and Fig. 5 show the location and relocation of manufacturing establishments throughout the area during the years 1935 through 1940. The tendency for Chicago's relocated plants to cluster on the rim of the city and in nearby suburban localities is clearly evident. In fact, three-fourths of all *relocated* industries removed to points less than 15 miles distant from the Loop. On the other hand, nearly three-fourths of the *new* industries located at points over 15 miles removed from the city's center. In general, the great majority of new industrial locations, both relocated and newly established, were made to the west and south of the city and within Cook County.

The fact that the current trend of industrial decentralization and relocation is largely taking place on the edge of Chicago or within relatively easy commuting distance from the city tends to lessen the drain upon Chicago proper caused by the greater industrial development outside its borders. Large numbers of the workers employed by the new and relocated plants situated near the city continue to reside in Chicago and

Table 17

LOCATIONS OF MANUFACTURING CONCERNS IN THE CHICAGO INDUSTRIAL AREA OUTSIDE CHICAGO, 1935-1940*

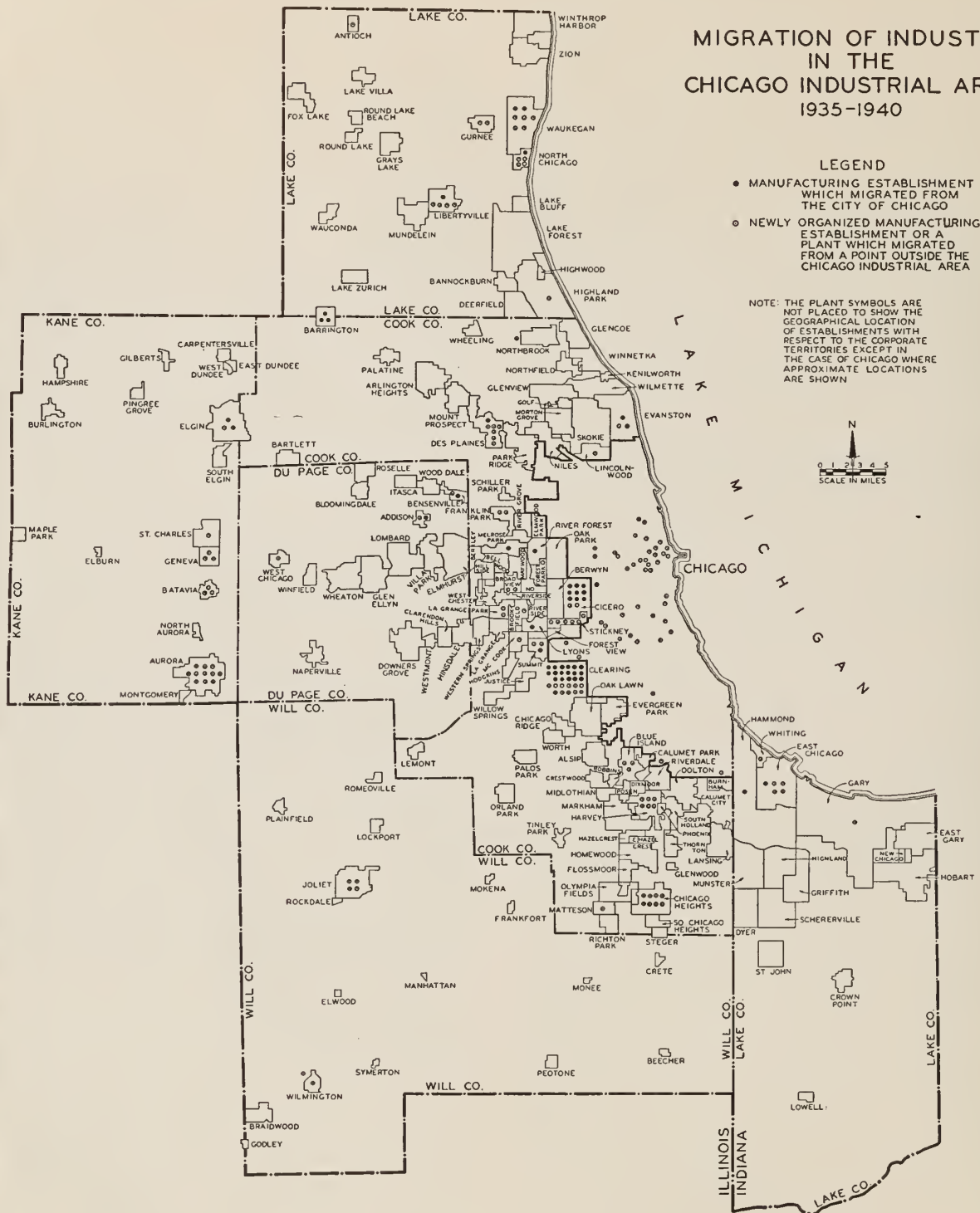
Location	Industries from Chicago	New Industries	Total
TOTAL.....	43	111	154
Clearing Industrial District.	17	11	28
Cicero.....	9	2	11
Aurora.....	...	11	11
Chicago Heights.....	...	8	8
Waukegan.....	2	5	7
Des Plaines.....	1	6	7
Stickney.....	...	6	6
Harvey.....	...	6	6
East Chicago.....	...	5	5
Libertyville.....	1	4	5
North Chicago.....	1	4	5
Joliet.....	...	4	4
Barrington.....	3	...	3
Elgin.....	1	2	3
Geneva.....	...	3	3
Batavia.....	...	3	3
Evanston.....	1	2	3
Summit.....	1	2	3
Blue Island.....	...	3	3
Gurnee.....	...	2	2
Bensenville.....	1	1	2
Addison.....	1	1	2
Near Wilmington.....	...	2	2
Franklin Park.....	...	2	2
Broadview.....	...	2	2
LaGrange Park.....	...	2	2
Antioch.....	...	1	1
Highland Park.....	...	1	1
St. Charles.....	...	1	1
West Chicago.....	...	1	1
Hammond.....	1	...	1
Whiting.....	...	1	1
Gary.....	...	1	1
Near North Brook.....	...	1	1
Lincolnwood.....	...	1	1
Melrose Park.....	1	...	1
River Forest.....	1	...	1
Forest Park.....	...	1	1
Brookfield.....	...	1	1
Lyons.....	1	...	1
McCook.....	...	1	1
Matteson.....	...	1	1

*In preparing this list considerable aid was obtained from the Industrial Development Records of the power and light companies serving Chicago and northern Illinois. This was supplemented and checked by reference to the files of chambers of commerce in the principal towns of the region and in some instances by a field survey.

to spend their earnings in the city. Many others, although shifting their places of residence to the suburbs, expend at least a portion of their incomes inside the city, although there is a growing tendency among suburban dwellers to patronize the major outlying suburban shopping centers. The potentialities of suburban industrial development as a factor in population decentralization cannot be overlooked. In view of lower housing costs and greater living amenities in suburban regions, the tendency is inevitable for those workers whose places of employment are well outside Chicago likewise to change their residences to outlying points, thus diverting a considerable portion of their family expenditures.

The locational tendencies of the new war plants in the Chicago area are serving to weld together as well as greatly to augment the arc of industrial development on the rim of Chicago. Of greatest importance in this respect is the huge new Chrysler works now under con-

INDUSTRIAL AND COMMERCIAL BACKGROUND FOR PLANNING CHICAGO



PREPARED BY
CHICAGO PLAN COMMISSION

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FIGURE 5

struction just inside the city between Cicero Avenue and Pulaski Road, extending from 71st to 77th Street. This ultra-modern plant will produce airplane motors and may employ as many as 50,000 workers at peak operating capacity. Nearby and also within the city limits, is the Studebaker plant whose ultimate employment may reach 10,000. Outside the city proper, but nevertheless within the same broad arc of industrial development along the city's edge, is the Douglas cargo airplane assembly plant, located south of Des Plaines, and the aluminum plant near Argo. Employment in these two establishments will probably total 20,000 workers or even more. The Buick airplane engine factory near Melrose Park, with an expected employment of about 20,000 further illustrates current locational tendencies.

Certain definite locational tendencies are also in evidence with respect to the new industries that have come to corporate Chicago. As shown by Fig. 5, virtually all new plants established inside the city during the 1935-1940 period are in the central portion of the city and remote from its boundaries. As noted above, however, the locations of the new war plants subsequent to 1940 have altered the city's past industrial pattern in major particulars. A heavy concentration of new industries occurred in the manufacturing districts in the south central portion of Chicago. The few remaining industrial locations were widely scattered.

Although no examination has been made of industrial shifts within the city proper, the trends in new plant locations during the 1935-1940 period reveal no current tendency toward intracity industrial decentralization. There have been some slight extensions of established industrial districts, but in the main the location of new companies has intensified the development of those areas that had been devoted to manufacturing for some time previous.

Chicago has a large supply of unused and undeveloped industrial resources. These include vacant manufacturing sites and numerous idle and abandoned plants, in addition to a substantial amount of space in loft buildings suitable for light manufacturing. Augmenting these resources are the facilities of the Central, Kenwood, and other manufacturing districts, and the potentiality of developing additional integrated districts of equivalent character in the Chicago Calumet area. Chicago's manufacturing assets are ample for medium-sized manufacturing plants; however, they are more restricted for the needs of heavy industries requiring vast expanses of land, measured in hundreds of acres.

REASONS FOR DECENTRALIZATION

As previously noted, Chicago is not unique in respect either to the decentralization of its industries or to the partially arrested industrial development of the corporate city compared with the outside suburban area. As one observer put it, the outward movement of Chicago's political boundaries has failed to keep pace with the outward extension of its industrial boundaries. Many American cities had similar experiences during the 1930-1940 decade. The reasons for the decentralization trend are numerous and varied; yet some of the reasons advanced as applicable to the Chicago region may help explain similar situations in other industrial regions. The purpose of this report is not to present a statistical analysis of all the causes of Chicago's industrial lag and the migration of its industries; but rather to state what appear to be the major reasons for the one-sided industrial development of the Chicago Industrial Area.

Although by no means all-inclusive, the causes set forth here represent the judgment and consensus of impartial observers, including policy-determining executives of manufacturing plants located within the city and outside its corporate limits. The more significant reasons may be enumerated as follows:

1. The marked differentials that exist in the property tax burdens, both real and personal, between Chicago and in its suburban area definitely favor the outside territory, except in a few isolated cases. No statistical proof is required to establish the validity of this generally well known fact. Tax expenses usually constitute a large item in the operating costs of a manufacturing enterprise, and industrial concerns are constantly seeking to effect reductions in this cost item. In this respect, the Clearing Industrial District offers a particularly favorable advantage, with a property tax rate of only about one-third that of the Chicago city rate.

2. Some of the requirements of the building code are reported to have discouraged plants from locating in Chicago; and the city's alleged onerous industrial regulations and inspection services are said to have been a tributary cause for factory removals from Chicago. The absence of building codes in unincorporated suburban territory and the less exacting industrial and inspection regulations naturally enable factories to be erected in less time and at less capital cost.

3. Land acquisition costs are less in suburban regions than in the city. Except for the organized industrial districts, such as Clearing, a great portion of the available sites outside Chicago are raw land, totally undeveloped and lacking in utilities and other necessary services, as contrasted with the completely serviced manufacturing sites within the city. Although the expense of developing these raw tracts beyond the city limits greatly increases the original site costs, yet the differential of cheap land still favors their acquisition by a substantial cost margin.

An added incentive for purchasing sites outside the city is the fact that manufacturing operations can be conducted most efficiently in one-story plants, where there is no break in the manufacturing process. It is sometimes easier to secure large tracts suitable for such plants outside the city where there are no streets or blocks to restrict an expansive plant layout.

4. The organized industrial district of Clearing has had a strong appeal in pulling many manufacturing establishments from Chicago as well as in attracting newly established concerns. This district, situated at the western edge of Chicago, possesses, in addition to the advantageous factors noted in items 1 and 2 above, other special features not ordinarily found in potential industrial territory outside the city. Among such features are the financial services which are offered to concerns locating in the Clearing district. In addition the district maintains its own engineering staff and can quickly design and erect a factory building suitable to the unique requirements of the concern locating in the district. This appeals to many small infant industries with limited capital.

REMEDIES PROPOSED

Assuming the desirability of stemming the outward flow of Chicago industries and of improving, both qualitatively and quantitatively, the city's industrial position and balance in relation to the area and to the country

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generally, the following broad suggestions are offered as principles for the achievement of these objectives:

1. In order to stop Chicago's industrial decentralization, it is necessary to overcome its apparent causes. The following approaches are indicated:

a. A re-examination of the city's tax structure as it affects industrial properties. The ultimate objective would be to improve the competitive position of Chicago in reference to the adverse industrial tax differentials which now exist between the city and its suburban area.

b. Study and equalization of building code requirements in the city and adjacent areas, and examination of possible steps to expedite administrative procedures. In this connection, it is reasonable to anticipate that an equitable code will eventually be put into effect in unincorporated areas of Cook County.

c. Re-examination of factory inspection services and regulations with a view to simplification and time saving methods. In order not to prejudice the economic and social welfare of other interests, however, the application of this principle should be made only after a careful study.

2. Positive steps are called for in order to revitalize Chicago's industrial economy, to improve the city's relative economic status, and to provide a greater degree of stability for its industrial structure. Some of the more significant approaches for achieving these ends would include:

a. The encouragement of the location in Chicago of a number of new industries, financially strong, each of which might employ, when completely developed, upwards of 2,500 workers. There are many desirable industrial sites within Chicago proper that could be utilized by a large number of manufacturing establishments of various sizes and types. One particularly good industrial area inside the city is the region adjacent to Lake Calumet. The Chicago Plan Commission has prepared a detailed analysis of the present characteristics of this

territory, and is working on suggested plans for its effective industrial utilization.

A program of encouraging new industries, however, should not necessarily contemplate the industrial growth of Chicago at the expense of the development of its suburban industrial area, for several localities in the surrounding territory offer advantages for certain types of manufacturing establishments not possessed by the city. Furthermore, it is hardly necessary to point out that unwise subsidies or measures of doubtful economic validity are not advocated as a means of strengthening the economic position of Chicago proper. In this connection the fact cannot be overemphasized that Chicago and its industrial area are mutually dependent units and in the broad sense they are not in competition but rather their functions are complementary and together they share a common economic destiny.

b. The particular encouragement of a larger degree of industrial diversification, in order to promote employment stability and to utilize more fully the labor force of the city. Promotional efforts should be directed particularly toward the gaining of new consumers' goods manufacturing enterprises, both of the durable and non-durable type. As pointed out in a previous section of this report, a number of consumers' goods industries show excellent promise of profitable operations. By virtue of centralized location and transportation advantages, Chicago is most advantageously situated for the distribution of consumers' goods to a national market.

c. A critical appraisal of Chicago's industrial role in the present war economy with a view toward its post-war reorientation to the city's advantage. Cases in point in this respect are the Buick, Studebaker, Douglas, and Chrysler plants. Not only will their operations be of importance to Chicago's economy during the war, but the potentiality of these establishments as the nucleus for the ultimate development of Chicago as an airplane manufacturing center holds great promise for the future.

PART III

COMMERCIAL TRENDS IN CHICAGO AND ITS REGION



Chapter I

DELIMITING A TRADE AREA FOR CHICAGO*

Economic support for the city of Chicago is drawn from two major sources—industry and trade—and these two activities make approximately equal contributions. The industrial half of the picture has been described and analyzed in the first and second parts of this report. This third part will round out the presentation with a description and analysis of trade and commerce as the other source of the economic support of Chicago and its population.

The commercial background of Chicago, however, is considerably more difficult to describe than is the industrial, for “trade” carries with it the idea of a “market”, and a market in turn conveys the idea of a focus—the converging point of a variety of factors and forces, some of wide sweep and some of narrow scope. Manufacturing, on the other hand, is carried on at a specific site, where are located a definite number of establishments, employing a definite number of workers, and turning out a precise quantity of goods measured in number of items, tons, or dollars. Trade is harder to measure, because its volume or dollar value of sales, and the other activities it includes, are dispersed over wide areas without precise geographical limits and which may serve Chicago alone or the whole United States or even the world.

Hence the first problem is to define a so-called “trade area” for Chicago—i.e., an area which Chicago serves commercially and which in turn supports Chicago’s commercial establishments.

The extent of the trade area dominated by Chicago varies for different commodities. The trade area for banking purposes is one thing; for radio influence another; for newspaper circulation another; for the packing industry another, etc., etc. Or, expressed in terms of groups or classes of merchandise, the area likewise differs; for retail trade it is one thing and for wholesale trade it is another. In short, there are as many trade areas as there are commodities, services, or purposes under examination. In illustration, it is necessary only to cite the great variety of administrative areas which are employed by the several departments of the Federal Government. The report of “Regional Factors in National Planning and Development” by the National Resources Committee contains a series of maps (108 in the appendix alone) outlining the administrative areas of the various federal departments and agencies. In almost no two instances do the administrative areas of one agency coincide with those of another agency.

The trade area of a city has been defined as the surrounding territory which is economically tributary to a city and for which that city furnishes the chief market and financial center. The selection of such an area for a city like Chicago is particularly difficult because Chicago is the hub of a region which for some purposes is of national proportions, yet which has important implications for the smaller territory immediately tributary to and served by Chicago proper. For example, Chicago is the headquarters of nation-covering concerns like Sears Roebuck and Montgomery Ward; of region-serving institutions like the Furniture Mart; and of many large retail establishments supplying metropolitan needs. But even this last, and apparently simplest, category presents

problems. Does it serve an area which includes or excludes places like Elgin, Aurora, Joliet, Gary, etc.?

It is probably impossible to determine with finality the exact boundaries of the trade area of Chicago, since its outer limits would be different for different types of goods and services. Then on the fringe of the trade area there is a twilight zone where the influence of Chicago diminishes in force to a point where it is just balanced by the trade outposts of a rival commercial city. However, in order to measure the strength of the forces which furnish economic support for half of the population of Chicago, it is absolutely necessary to define in a general way the limits of the territory contributing mainly to Chicago’s power as a commercial center.

The problem of defining the area that is dominated by Chicago has been simplified by breaking the concept down and delimiting two trade areas—one which for convenience will be referred to as the wholesale trade area and the other the so-called retail trade area. Within these two areas, it is proposed to examine the present status of trade and commerce, recent trends in these fields, and possible future developments which will aid in planning to make the city serve its economic functions to the fullest.

CHICAGO’S WHOLESALE TRADE AREA

The first step was the delineation of the larger area of Chicago’s trade influence or, looked at from the other side, the larger area which contributes to Chicago’s trade position in the larger sense.

The method of procedure was to superimpose on one map, showing county divisions, the following previously defined areas:

1. The seventh Federal Reserve District, of which Chicago is the center.
2. The area served by the Chicago branch of the Federal Home Loan Bank.
3. Evening listening areas (primary and secondary) at Station WBBM of the Columbia Broadcasting System.
4. Branch District 07-1 of the National Recovery Administration, taken from its “National Areas of Trade.”
5. The area of 1-day car shipping from Chicago as defined by the Chicago Association of Commerce.
6. The area of *Chicago Tribune* circulation.
7. The occasional Trading Zone for Chicago as outlined by *Editor and Publisher*, Market Guide, 1941.

The results are shown on Fig. 1.

Examination of the resulting map revealed a very considerable degree of uniformity in the various areas. But in order to consolidate or to define a single composite area out of this complex, all counties included in the several areas were listed. Then a line was drawn about that area which was composed of counties that were included in four or more of the seven series analyzed.¹

*For helpful suggestions regarding the choice of series to be used in delimiting Chicago’s trade areas, acknowledgement is made to Mr. King Park, Sales Promotion Manager, Station WBBM, Columbia Broadcasting System, Inc., and especially to Mr. John W. Boatwright, Manager, Sales Research Department, Standard Oil Co., (Indiana).

¹Only four exceptions were made to this rule. In southeastern Iowa, the counties of Hamilton, Keokuk, Mahaska, and Poweshiek were included in order to smooth out the boundary at these points.

SERIES USED IN DELIMITING THE WHOLESALE TRADE AREA OF CHICAGO

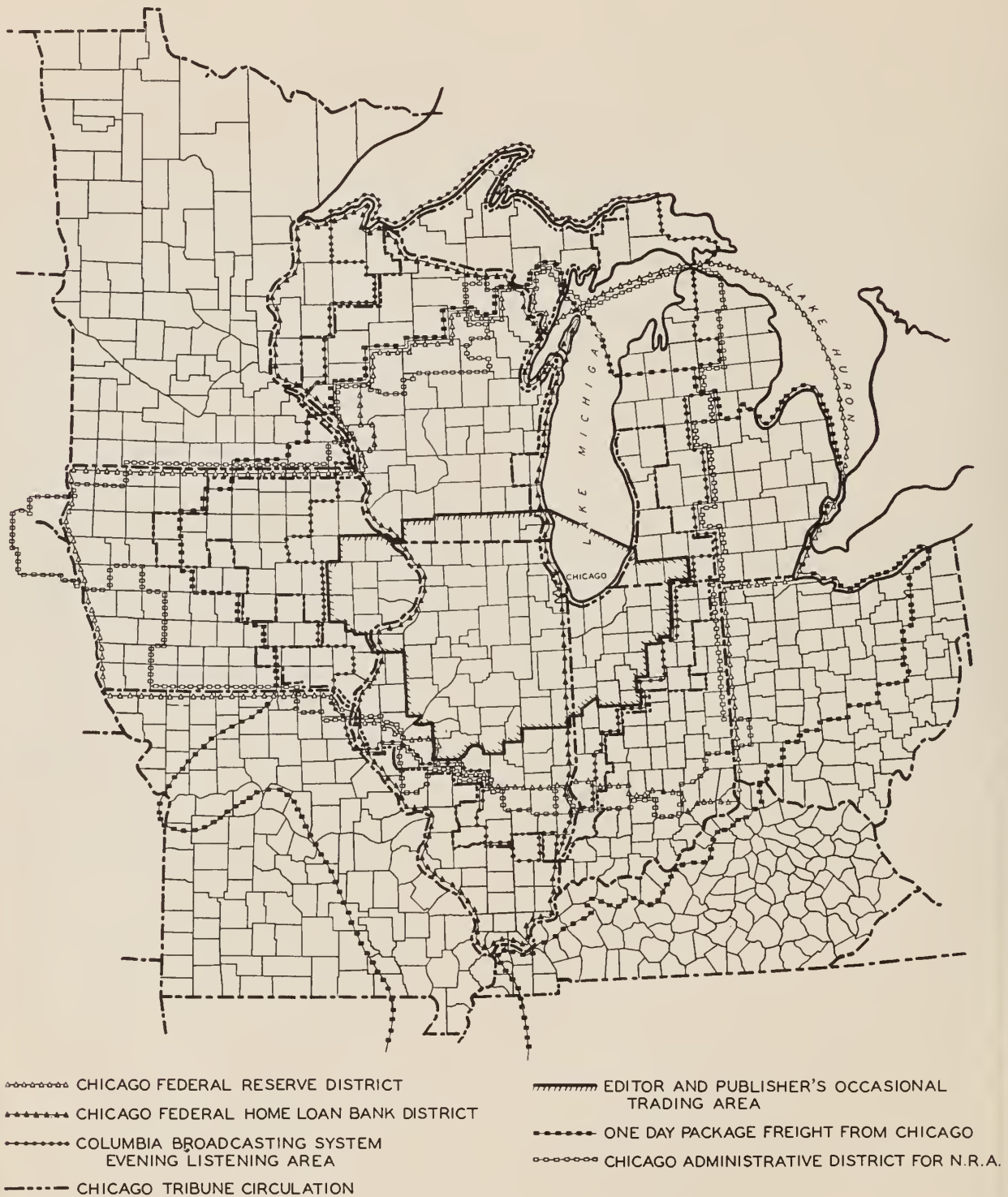


FIGURE I

THE WHOLESALE TRADE AREA OF CHICAGO

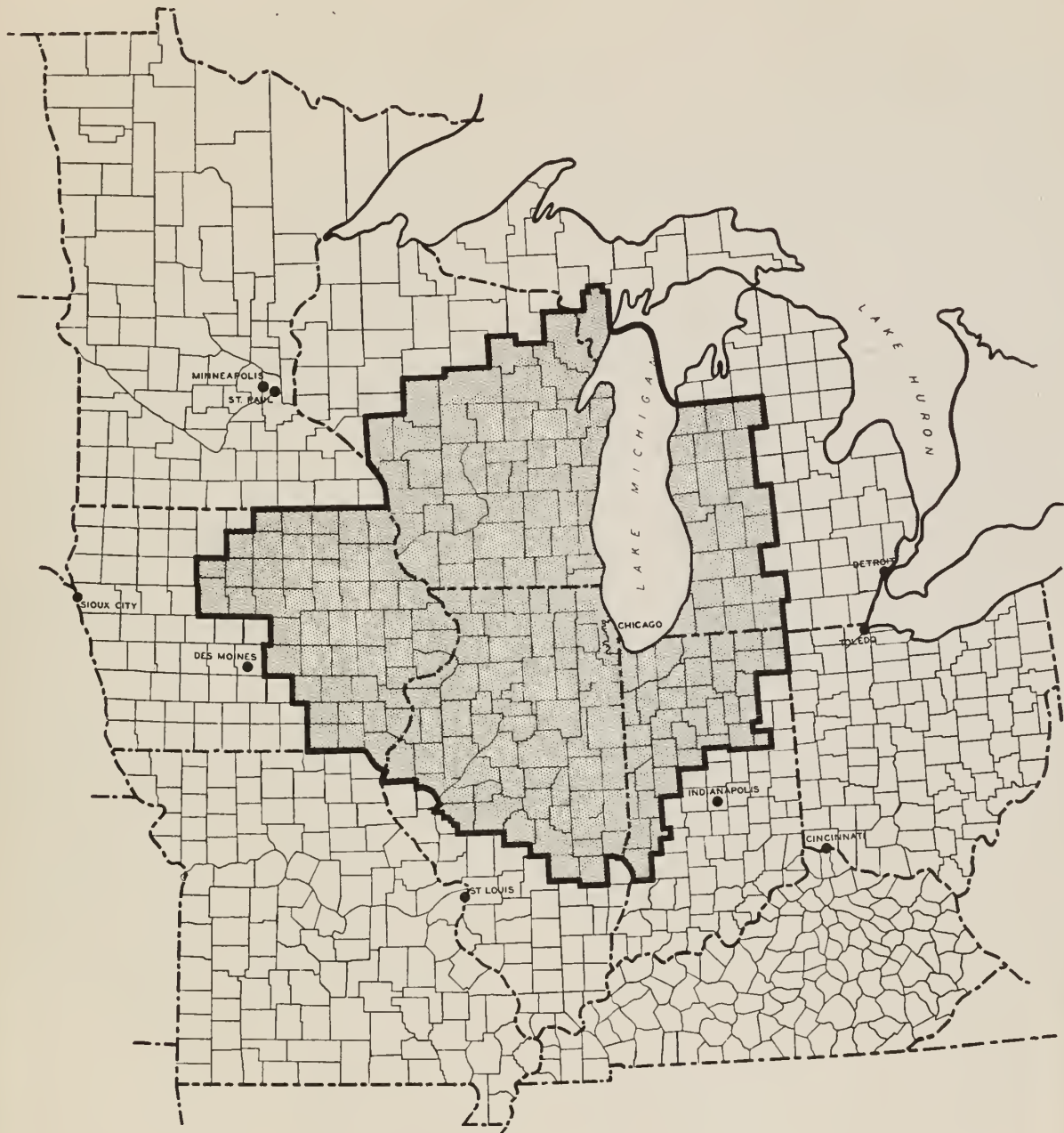


FIGURE 2

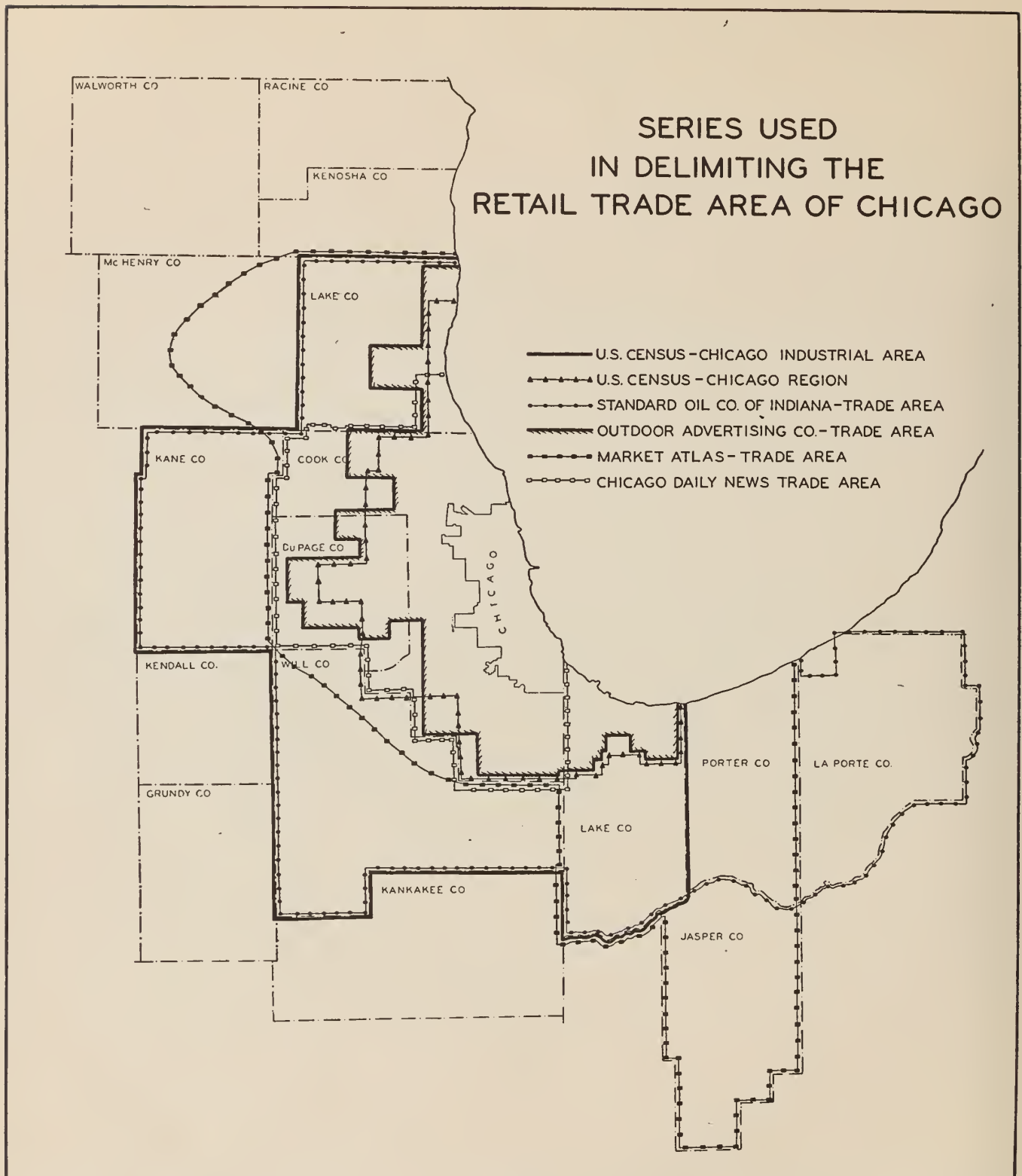


FIGURE 3

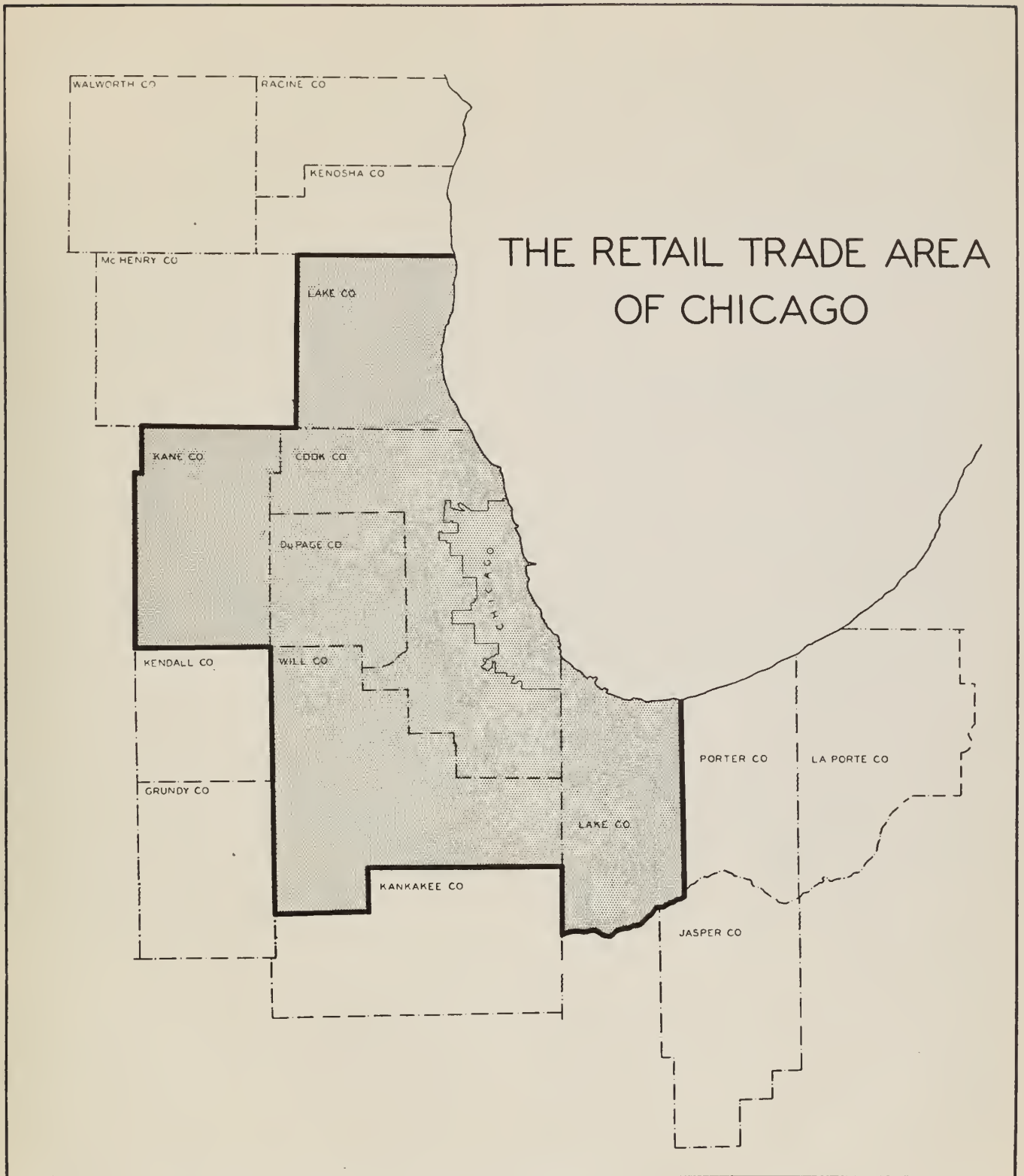


FIGURE 4

The resulting area (Fig. 2) seemed to draw a reasonable boundary between Chicago's area of influence and that of such centers as Sioux City and Des Moines in Iowa; Minneapolis and St. Paul in Minnesota; Detroit in Michigan; Toledo, Cincinnati, and Columbus in Ohio; Louisville in Kentucky; Indianapolis in Indiana; and St. Louis and Kansas City in Missouri. In other words, the only major "independent" city which falls within Chicago's area of influence is Milwaukee, and adjustments will have to be made for this exception in any detailed study of trade-area problems.

Thus the wholesale trade area of Chicago for present purposes is that which is shown on Fig. 2.

CHICAGO'S RETAIL TRADE AREA

The second step was the delineation of the smaller area, one more or less synonymous with Chicago's retail trade influence.

The technique applied was the same as that used in defining the wholesale trade area. In this case the following areas were superimposed on a county-outline map:

1. The Chicago Region as defined by the Chicago Regional Planning Association.
2. The Chicago Metropolitan District as defined by the census. (1932).
3. The Chicago Industrial Area as defined by the Census.
4. The trade area of Chicago as defined by the Standard Oil Company of Indiana.
5. The Chicago trade area as defined by the Outdoor Advertising Co., "Urban Markets and Retail Sales," 1938.
6. The Chicago trade area as defined in the *Market Atlas of the United States*, International Magazine Co. Inc., 1931, p. 132 (also used by the Federal Coordinator of Transportation).

7. Daily Trading Area, as defined by the *Chicago Daily News*.

The results are shown in Fig. 3.

Application of the same technique to the resulting complex—i.e., inclusion of those counties which were represented in four or more of the series employed—resulted in a six-county retail trade area (Cook, DuPage, Kane, Lake and Will counties in Illinois and Lake County in Indiana). Fig. 4 therefore presents the retail trade area of Chicago as defined for this study.

THE DATA

The next step was to find measures of trade activity and trade potentiality for these areas. The most important considerations in this connection are two: (1) is the market—in the sense of numbers of potential buyers and sellers—expanding or contracting; and (2) is the purchasing power in the areas showing an upward or a downward trend? In other words, trade or commercial activity is not likely to be increasing if population is decreasing—and this is particularly true of retail trade. But mere numbers of people are not of themselves significant; it is necessary to know something about the wherewithal they have for supporting a market for retail or wholesale goods. Besides, some relation exists between population and purchasing power, for population is the source of purchasing power. This does not mean, however, that if population is increasing in a given area, the purchasing power is also automatically increasing. The reverse may quite conceivably be true. Also it is possible that purchasing power can increase in the face of a decrease in population. But, by and large, the two series are likely to move in the same direction. Hence, it is important to know whether people are coming into or departing from the areas in question. Therefore the analysis of population trends is the logical first step, and the second step is examination of some measures of purchasing power.

Chapter II

POPULATION TRENDS

The over-all picture of population in the two Chicago trade areas is presented in Table 1.

Table 1
PERCENTAGE INCREASES IN POPULATION, THREE AREAS AND UNITED STATES, 1850-1940

Decade	Wholesale Trade Area	Retail Trade Area	Seven-State Trade Area†	United States
1930-1940.....	4.5	3.1	5.5	7.2
1920-1930.....	16.2	32.7	14.2	16.1
1910-1920.....	12.3	27.9	13.4	14.9
1900-1910.....	13.7	31.5	11.3	21.0
1890-1900.....	2.6	50.4	20.04	20.7
1880-1890.....	39.0	82.6	24.8	25.5
1870-1880.....	26.1	57.9	28.2	26.0
1860-1870.....	47.3	95.6	48.6	26.6
1850-1860.....	115.3	136.3	93.3	35.6

†Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri and Wisconsin.

Consider first of all the background data. The seven-state area² like the country as a whole shows a declining rate of population growth, but the slowing up has been much sharper over the 100-year period in the seven-state than in the national area. This is to be expected, of course, because of the typically westward flow of American population to the once unsettled territories. If we concentrate, however, on the picture since the Civil War

decade, the result is much more reassuring for the seven-state area. Since 1870 that area has held its own fairly well, relative to the national trend, except for the decade 1900-1910. This was the period when the so-called "new" immigration was at its height, much of which never got beyond the Atlantic seaboard. With two exceptions, that in the 1900-1910 decade just mentioned and that in the period from 1870-1880, the differential between the rates of growth for the seven-state area and for the nation has never been as much as 2 per cent.

Examination of the results for the retail and wholesale areas reveals that the showing of the latter is better than that of the former. During the past century population in the wholesale trade area has—with two exceptions—maintained a rate of growth approximately parallel with that of the seven-state area of which it is a part. Of the two exceptions (1890-1900 and 1930-1940) only the last is of importance for the present study. In the decade 1930-1940 the wholesale area increased only 4.5 per cent compared with a 5.5 per cent rate for the seven-state area. Compared with the national trend, the wholesale area has kept up a corresponding rate of growth, with the same two exceptions noted above. Its expansion in the last decade, however, compared even more unfavorably with the 7.2 per cent national rate than with the seven-state figure.

²Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, and Wisconsin.

COMMERCIAL TRENDS IN CHICAGO AND ITS REGION

Population increase in the retail trade area of Chicago has always been about twice as rapid as that in the wholesale, seven-state, or national area. But in 1930-1940 its gain was less (3.1 per cent) than that in any of these other areas.

These results are not encouraging, especially in the face of a gradually decreasing rate of total national population growth. However, at this point it may be useful to refer to the reversal in rate of gain which occurred in the wholesale area in the decade 1890-1900. That period like the 1930-1940 decade was dominated by a depression economy and, after it was passed, population again bounced back with a substantial increase. The possibility of a repetition of this experience is thus present, although honesty demands the admission that underlying factors to support that optimistic view are less promising now than they were then.

In conclusion it should be emphasized, however, that both the retail and the wholesale areas are *still gaining* in number of potential buyers and sellers. Population gains are still being registered, although not in such substantial proportions as in the past. The problem for the future, therefore, is not one of reversing a downward trend but of maintaining or stimulating a present positive direction.

Another view of the over-all pattern of population distribution may shed further light on the problem. Figs. 5 and 6 present the picture of population gains and losses by counties in the wholesale area and the data are summarized in Table 2. These exhibits show a stabilization

Table 2

COUNTIES IN THE CHICAGO WHOLESALE TRADE AREA CLASSIFIED ACCORDING TO POPULATION CHANGE, 1920-30 AND 1930-40

State	Losses		Increase Less than 10%		Increase More than 10%	
	1920-30	1930-40	1920-30	1930-40	1920-30	1930-40
Illinois.....	31	19	17	33	13	9
Indiana.....	24	9	7	25	6	3
Iowa.....	26	14	18	33	5	2
Michigan....	13	0	4	20	7	4
Wisconsin...	21	3	14	38	12	6
TOTAL...	115	45	60	149	43	24

of population movement in the last decade. Between 1920 and 1930 the counties showing population losses were more than twice as numerous as in 1930-1940; likewise almost twice as many counties showed gains of over 10 per cent. In short, actual losses or sharp gains

were the predominant type of change in the 1920-1930 period. As far as gains alone were concerned, only 113 or approximately half of the 218 counties registered population increases in that decade.

In the last decade 173 (79.5 per cent) of the total 218 counties showed population increments. The pattern of sharp spurts or positive shrinkages has thus recently given way to one of a smaller but more widespread distribution of population gains. Thus, the resulting picture (Fig. 6) is one of fewer losses sprinkled around the periphery of the area and fewer large gains concentrated at the urban centers.

One further comparison may be made to show Chicago's trend with reference to that of other large urban centers whose trade areas adjoin or perhaps even impinge on the Chicago market. According to Table 3, all the other seven trading areas listed there enjoyed a greater rate of population increase in the last decade than did Chicago³.

Table 3

PERCENTAGE INCREASES OF POPULATION IN URBAN TRADING AREAS BORDERING ON THE CHICAGO WHOLESALE TRADE AREA, 1920-30 AND 1930-40

City	1920-30	1930-40
Chicago.....	32.7	3.2
Detroit.....	61.1	8.0
Indianapolis.....	12.4	7.4
Ft. Wayne.....	12.5	4.6
St. Paul.....	9.3	5.7
Minneapolis.....	14.8	8.9
Des Moines.....	6.4	5.6
St. Louis.....	15.0	11.9

Substantial though these differences are in most cases, too much weight should not be placed upon them. The years 1930-1940 were a depression decade and in no sense "normal." In times of depression the "buy-at-home" fallacy always exerts its widest influence. When the total trade or total business to be divided is small, competition for a share of that small total is especially keen, because it has literally a "survival value" to many individuals and enterprises. Hence much trade and commerce are likely to remain in relatively restricted local areas instead of flowing to major centers. The typical fluidity of American business is thus interrupted by the necessity to economize in various ways.

³It is to be noted that the percentages here referred to are those for the trading areas of these cities, not the percentages of growth for the respective cities proper.

Chapter III

TRENDS IN PURCHASING POWER

The next step is to examine trends in the purchasing power of this increasing population of the Chicago trade areas. The data for analysis of this factor on a county basis are none too satisfactory. In the first place, such data are scarce. Very few series which are significant as measures of the buying power of the public are available in terms of counties. Furthermore, those which are at hand do not lend themselves to analysis in chronological terms. For example, series expressed in dollars require corrections to take care of changes over a period of years in the purchasing power of the dollar. Similarly, measures like individual income tax returns require elaborate adjustments, as a result of radical changes in the basic law, in order to make year-to-year comparisons possible.

Or, take the number of radios per family. Here the effect of important technological improvements in the industry has been to put radios within the reach of even relatively low-income groups, with the result that increases in radio ownership would not be an accurate indication of change in purchasing power.

With these limitations present, only a few measures have been selected for analysis. Their special defects will be pointed out as each is employed. The method will not be that of tracing chronological change but that of comparing rates of change in the several areas that have been delimited. The object is to discover the position of Chicago's retail area and of Chicago's wholesale

POPULATION CHANGES
IN THE CHICAGO WHOLESALE AREA
BY COUNTIES
1920-1930

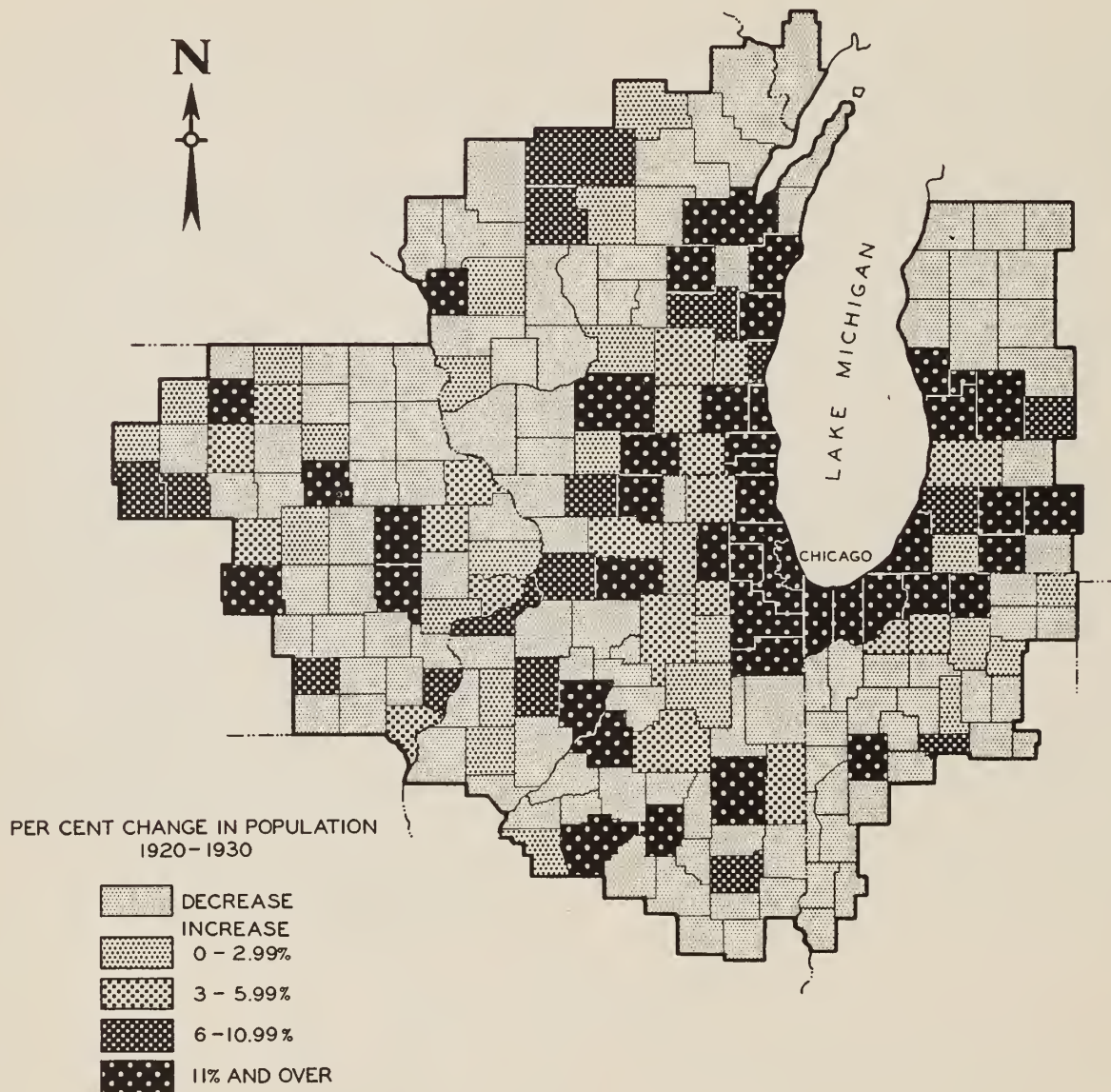


FIGURE 5

POPULATION CHANGES
IN THE CHICAGO WHOLESALE AREA
BY COUNTIES
1930-1940

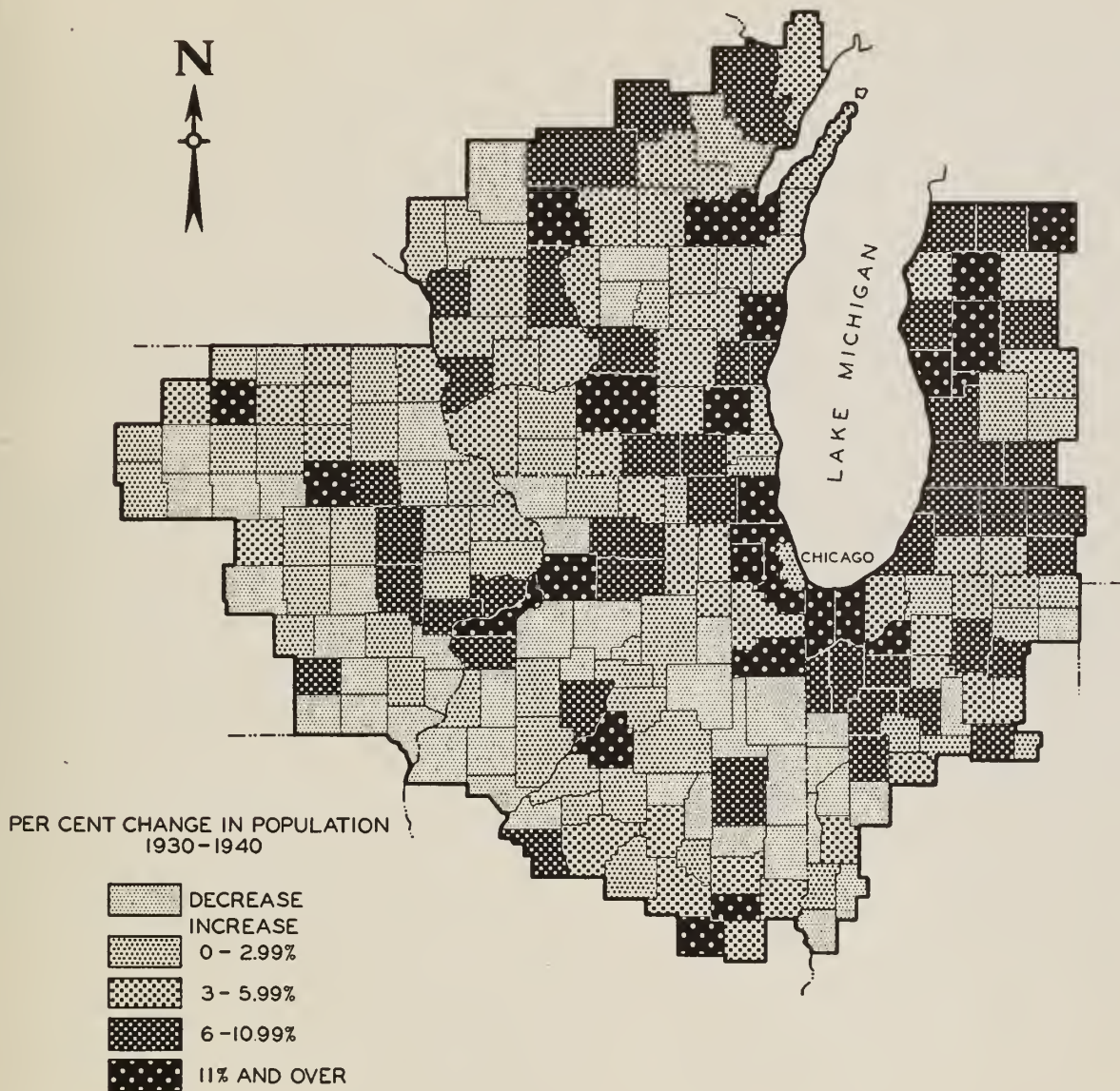


FIGURE 6

area relative to the larger territories of which they are a part. For example, is purchasing power in the retail area increasing relative to that in the wholesale area and that in the nation; and similarly, is purchasing power in Chicago's wholesale area increasing relative to that in the seven-state region and to that in the United States?

Volume of Retail Sales. One measure of buying power is the amount of money spent on retail purchases. This series is made available annually on a county basis by *Sales Management*. The dollar volume for the last six years for each of the several areas has been expressed as a percentage of that for the larger areas, with the following results:

Table 4

DOLLAR VOLUME OF RETAIL SALES IN CHICAGO WHOLESALE AREA COMPARED WITH SEVEN-STATE AREA AND THE UNITED STATES

Year	In Retail Trade Area as Percentage of		In Wholesale Trade Area as Percentage of	
	Wholesale Area	United States	Seven-State Area	United States
1936...	41.80%	4.58%	48.26%	10.97%
1937...	41.61	4.51	48.02	10.84
1938...	41.91	4.41	48.57	10.65
1939...	42.91	5.03	52.98	11.01
1940...	42.55	4.76	48.22	11.19
1941...	40.05	4.71	50.86	11.76

In general, these figures show an improving picture of the dollar volume of retail transactions in the Chicago areas relative to the seven-state area and to the nation as a whole. The so-called retail trade of Chicago has made the poorest showing during the last six years. After an initial improvement, its volume of sales actually declined in 1940 and 1941, probably as a result of decentralization. Relative to the national total, the Chicago retail trade area has also slipped in the last two years, but in spite of this recent decline it ended the period at a higher level (4.71 per cent) than it started (4.58 per cent).

The Chicago wholesale trade area has shown a fairly steady improvement during the six-year period. Its volume of sales represented a larger percentage of the seven-state total and also of the national total in 1941 than in 1936.

These rates of increase in dollar volume of retail sales are neither spectacular nor uniform but they are, in general, positive. And the recent recession of the retail area does no serious damage to this generalization, for the retail area has lost only to the wholesale area and consequently the gains and losses may be said to have been kept within the family. Thus purchasing power to support trade and commerce within Chicago's sphere of influence was greater proportionately in 1941 than it was in 1936.

Spendable Income. Another measure of purchasing power, also taken from *Sales Management*, is their series called "spendable income" or "effective buying income." Use of the same method as that applied to retail sales yields the results given in Table 5.

Here again we find a picture which shows an over-all improvement of Chicago's purchasing power—in fact, a more consistent improvement than that shown by volume of retail sales. Except for a very small fraction of one per cent, the indexes show a steady upward trend of purchasing power from 1939 through 1941 and, even in

Table 5

SPENDABLE INCOME IN THE WHOLESALE AREA OF CHICAGO COMPARED WITH THE SEVEN-STATE AREA AND THE UNITED STATES

Year	In Retail Trade Area as Percentage of		In Wholesale Trade Area as Percentage of	
	Wholesale Area	United States	Seven-State Area	United States
1939...	43.68%	4.85%	48.14%	11.11%
1940...	43.95	4.98	48.75	11.34
1941...	43.93	5.06	49.29	11.51

spite of its slight recession in 1941 the spendable income in the Chicago retail area represented a larger proportion of that in the wholesale trade area in 1941 than in 1939.

Thus, it appears that the people in the Chicago trade areas have been acquiring somewhat more of this world's goods with which to support the trade and commercial activity centering in this region than have those in the larger areas. This trend, feeble though it may be at the moment, should unquestionably be strengthened and capitalized to the benefit of that half of the Chicago economy which furnishes trade and commercial facilities.

New Passenger Car Sales. This index has its deficiencies; nevertheless it is one measure of the spending proclivities of people in a given area. These data are also taken from *Sales Management* and have been treated in the same manner. The area ratios are as follows:

Table 6

NEW PASSENGER CAR SALES IN THE WHOLESALE AREA OF CHICAGO COMPARED WITH THE SEVEN-STATE AREA AND THE UNITED STATES

Year	In Retail Trade Area as Percentage of		In Wholesale Trade Area as Percentage of	
	Wholesale Area	United States	Seven-State Area	United States
1939...	37.62%	4.42%	44.96%	11.79%
1940...	39.03	4.59	44.10	11.76
1941...	40.00	4.71	44.46	11.79

This measure like the other shows generally improving potentialities for Chicago trade and commerce. Also, people in the retail and wholesale areas about Chicago have been spending slightly more on the average for the purchase of new automobiles than have people in the nation or even in the seven-state region.

Manufacturing Employment. To the extent that manufacturing is the source of livelihood to a large portion of the residents in the Chicago region, an index of the trend of industrial employment in recent years gives some clue, at least, to the purchasing power of that part of the population. The data for the retail area, which is coterminous with the Chicago Industrial Area, have been presented in Tables 3, 4, 5, 6 and 7 of Part II of this report. According to those tabulations, the ratio of employment in the Chicago retail area to the national total shows no very positive trend in either direction. All that can be said is that the area seems to be holding its own at about the 6 per cent level. Comparison of employment in the retail area with that in the wholesale area shows a small gain for the former at the last three biennial periods; the percentages were 47.1 in 1935, 47.7 in 1937, and 48.1 in 1939.

COMMERCIAL TRENDS IN CHICAGO AND ITS REGION

The picture for the wholesale trade area of Chicago is more positive. Its ratios of manufacturing employment to those in the seven-state area and in the nation show an over-all increase in employment relative to that in the two larger areas. The figures are as follows:

Table 7

MANUFACTURING EMPLOYMENT IN WHOLESALE AREA OF CHICAGO EXPRESSED AS PERCENTAGE OF MANUFACTURING EMPLOYMENT IN SEVEN-STATE AREA AND THE UNITED STATES

Year	In Wholesale Trade Area as Percentage of	
	Seven-State Area	United States
1935.....	50.16%	12.37%
1937.....	50.85	13.18
1939.....	52.36	12.75

The net result of this examination of manufacturing employment is an index of purchasing power trends in the Chicago area is almost a stalemate. About the most that can be said is that support for trade and commerce from this source is holding its own, with a moderate tendency toward improvement, in the wholesale area particularly.

Manufacturing Payrolls. This index of the contribution of manufacturing is less satisfactory than that of employment because of the changing value of the dollar. However, the statistical difficulty can be avoided by the area-comparison method. Data taken from the biennial

Census of Manufactures for the last three periods (which are the only ones supplying these data on a county basis) yield the following results:

Table 8

MANUFACTURING PAYROLLS IN RETAIL TRADE AREA AND WHOLESALE TRADE AREA OF CHICAGO EXPRESSED AS PERCENTAGES OF MANUFACTURING PAYROLLS IN THE UNITED STATES

Year	In Retail Trade Area as Percentage of		In Wholesale Trade Area as Percentage of	
	Wholesale Area	United States	Seven-State Area	United States
1935...	51.16%	6.70%	47.66%	13.10%
1937...	48.90	7.31	51.56	14.95
1939...	50.08	7.05	51.18	14.07

The figures in these various series yield no evidence of definite trends. The only positive result of these comparisons is that the ratios—with the exception of that for manufacturing payrolls in the retail area relative to the wholesale area—are higher in 1941 than in 1939, indicating that Chicago's purchasing power position has improved in the last three years.

In summarizing the contribution of manufacturing to purchasing power, about the most that can be said with respect to any manufacturing index is that it shows that both retail and wholesale areas are drawing a consistent percentage of the purchasing power derived from manufacturing activity in the vicinity.

Chapter IV

THE FUTURE OF CHICAGO'S TRADE AND COMMERCE

Up to this point attention has been focussed upon the past. Nothing has been said about the turn of events since Pearl Harbor. The incidence of the war, furthermore, makes it extremely difficult to make predictions about the future. All that can be done at this point is to indicate some of the potentialities in the present scene and suggest long-term, post-war trends to be watched and lines of investigation to be pursued when the present emergency is ended.

Before turning specifically to Chicago's trade future it is pertinent to mention one broad fact which is significant for the future of trade and commerce generally. The present high level of employment and relatively high level of wages, especially in the war-production industries, is building up a tremendous backlog of pent-up purchasing power. The advent of peace may be expected to release this potential demand and result in a great spurt of buying—especially of consumers' goods, both non-durable and durable. To be sure, some of this potential demand will be syphoned off through increased taxes. Nevertheless, it seems reasonable to expect a post-war rush to buy many of the things that have not been procurable during the emergency. Chicago must be ready to tap this reservoir of spending power and see that it flows in proper volume to support the city's trade and commercial enterprises.

This study has shown that the Chicago trade areas—both retail and wholesale—are in a good position relative to their immediate hinterland and also to the national total. The problem is to maintain and improve that position by careful planning for future trade and commercial development.

The present picture contains positive elements in addition to those which have already been mentioned. First of all, there is the fact of a substantial increase in population since the 1940 Census enumeration, as revealed by the sugar rationing registration⁴. This influx of population represents an increase in the number of potential buyers of Chicago merchandise and services.

In the second place, it seems safe to say here that this increase in population in all probability does mean at least a proportional increase in purchasing power. In the first place, a large portion of these newcomers have arrived in Chicago to take specific jobs, and not just because the prospects of a job seemed better here. Moreover, many of them are employed in war production plants, where the level of earnings is relatively high. Consequently, their spending should contribute to a more than proportional rise in the level of purchasing power.

The third positive factor in the current scene is the construction throughout the Chicago retail and wholesale areas of many new plants. These have been built for war production, but are capable of conversion into peace-time factories of the latest and most efficient design or may be designed for the continued production of military goods on a reduced scale. In other words, these plants will supply the means of employing in peace-time industry most of their army of workers now engaged in war production, thus preserving their purchasing power for the Chicago market. An element of permanence thus attaches to this recent growth and should not be overlooked.

⁴The total apparent increase in population, obtained by differences between the census and sugar rationing figures is 82,163. Actually, the true increase is probably somewhat less because the rationing registration is more likely to approach completeness of enumeration.

These three positive factors pertain specifically to Chicago and represent particular advantages which Chicago enjoys tradewise—relative to other areas. With these factors to aid it, Chicago should be able to maintain and improve its trade position in the post-war economy.

In addition to these definite facts, there are many elements of potential strength which cannot be presently evaluated but which should be carefully watched and guided to feed Chicago's commercial development.

First, and perhaps most important, of these factors from a trade point of view is the transportation pattern. With respect to railroad transport, Chicago holds undisputed preeminence among the cities of the country. As the hub of the national railroad network, Chicago's position is more or less assured. However, physical superiority of railroad facilities should not be taken as assuring economic superiority. The same kind of shrewd vision that characterized the early Chicago rail executives will be needed to protect Chicago's strategic position in the future. At the present moment, for example, perhaps some capital may be made of the fact that grain shipments are being returned to the rails for the duration. This may have important implications for Chicago's declining milling industry and more especially for its wholesaling functions in the grain business. Opportunities for protecting Chicago's economic interests will multiply—especially in collaboration with other areas rather than on a competitive basis.

Then there is the motor carrier industry and here again Chicago has a leading, if not the leading, position among cities of the country. The future of this industry will bear especially close scrutiny. Having only recently come under federal regulation, it is really too early to say what its ultimate destiny will be and what will be its relation to other forms of transport. Unquestionably in recent years the motor truck has exerted a tremendous decentralizing influence upon business and trade. Will that be its role in the future? The answer to that question will have important bearing upon the number and size of Chicago's retail and wholesale establishments.

Air transport—particularly of freight and express—presents another immeasurable force. However, one fact is clear. Undoubtedly, the industry will enjoy a tremendous boom in the post-war period, and Chicago, already in a strategic position, stands to benefit greatly. This, however, is looking at the problem from the technical standpoint alone. The economic implications are not yet clear. The issue presented is the familiar one of centralization versus decentralization. Planning with respect to this factor will call for foresight to see that this expanding service is guided so that it will focus trade and commerce in the Chicago region rather than syphon it off to other areas.

Finally, under the heading of transportation, the long-time effect of the present rubber shortage must be con-

sidered. These effects may be purely temporary if the duration is short. But if the war should drag on, some of the patterns established during the emergency may have a chance to jell and exert considerable influence upon the post-war trends of trade and commerce. For example, will the impetus now being given to local buying give those merchants a temporary advantage which they will be able to retain after the emergency is past? Will mass transportation agencies be able to keep the business that has been returned to them during the war period? Such questions have much bearing on the distribution of trade over both larger and smaller areas.

The second major group of somewhat uncertain factors which bear upon the future of Chicago's trade and commerce consists of trends in merchandising policies. For example, to what extent will merchants practice hand-to-mouth buying in contrast to accumulation of large inventories? This question is a corollary of the transportation factor and will depend for its answer upon the nature of our post-war transportation policy, which may or may not be—although it should be—formulated on national lines. Another pertinent problem in this group is that of the future of the small, independent retail store. If chain stores should continue to expand, the location of their distribution centers and their own manufacturing plants, if any, will have profound effects upon the pattern and trends of both retail and wholesale trade.

Answers to such questions are obviously not readily obtained. They represent long-term trends which emerge slowly and often have taken more or less permanent form before their implications are fully recognized. Nevertheless, their incidence is such that they may protect or damage Chicago's trade relations with its immediate and remote hinterlands and also with the nation.

In the light of all these unknowns, planning for the future trade and commercial development of Chicago becomes extremely complex. Even simultaneous equations have limitations in situations like this. However, the planning process contributes a tangible basis, as this study has indicated. Chicago's trade itself has been shown to have considerable stability. More than that, in recent years the population and purchasing power to support and expand that trade activity have shown small but fairly positive gains, and they are being augmented by the rapidly expanding war activity in the city and region. Thus, planning for commercial development in the Chicago trade areas should proceed on the assumption of a continued, and probably somewhat increased, volume of retail and wholesale business. Predicated on this basis, and with the possibility of controlling the transportation factor—the vital circulating medium—so as to facilitate the flow of this increased trade and commerce, Chicago should be able to retain and strengthen her position as the trade hub of a rich inland empire.

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